

D I S S E R T A T I O N

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*What Works? Integrating
Multiple Data Sources and Policy
Research Methods in Assessing
Need and Evaluating Outcomes
in Community-Based Child and
Family Service Systems*

Elan Melamid

RAND Graduate School

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RGSD-161

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**What Works? Integrating Multiple Data Sources and Policy Research
Methods in Assessing Need and Evaluating Outcomes in
Community-Based Child and Family Service Systems**

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What Works? Integrating Multiple Data Sources and Policy Research Methods in Assessing Need and Evaluating Outcomes in Community-Based Child and Family Service Systems

Chapter 1. Introduction/Problem statement:

This research examines the roles policy analysts and policy research may play in improving the effectiveness of systems of care serving at-risk children and their families. This work presents four separate analyses which use a variety of quantitative and qualitative analytic methods, and examines how they can be integrated to improve service design and outcomes evaluations in community-based child and family social service systems. In presenting results from these analyses, this dissertation seeks to explicitly examine the roles rigorous policy research can play in such contexts, the limitations and challenges of applying these new analytic techniques in public social service settings, and seeks to offer suggestions for areas policy researchers, systems managers, political leaders, clients, and community members might focus future work in this field.

Community-based service models are gaining increasing attention as dissatisfaction grows with traditional hierarchical organizational structures used in many public social service agencies [Kamerman and Kahn, 1990; Schorr, 1997]. These reforms involve many separate strategies, including assigning staff at the neighborhood level, devolving decision-making authority to local actors, allocating resources to specific communities, and turning over operational responsibilities to non-governmental, community-based organizations. This shift in service approach places a variety of demands on these organizations, not the least of which is to develop and use data sources and methodologies that can allow decentralized operations to fairly and effectively serve vulnerable, multi-challenged children and families.

This dissertation examines four initiatives undertaken at the nation's largest child welfare service district, the New York City Administration for Children's Services (ACS), as central components in that agency's reform activities from 1996 to 2000. This reform strategy emphasized strengthening the operations of this complex organization, while shifting services into integrated, community-based networks of care. Over this period, this agency significantly expanded staffing levels, increased training and compensation levels for line caseworkers, supervisors and managers; implemented case conferencing and instant response teams and dramatically lowered caseloads in child protective service operations charged to investigate allegations of child abuse or neglect; and implemented a dramatic shift to community-based services via completion of a Request for Proposal process covering over \$600 million in foster care and preventive services per year [Scoppetta, 2001].

The papers presented in this dissertation represent a range of projects conducted within ACS under the aegis of the agency's newly created policy research unit, the Office of Management Development and Research. As such, the projects underlying the research presented here reflect the roles and responsibilities assigned to this agency's policy research team during the reform process, and represent clear and explicit examples of the work policy researchers may be expected to contribute in public social service organizations undergoing reform.

In addition to examining methodological and policy-level implications of the specific quantitative and qualitative analytic initiatives used to support the implementation and evaluation of community-based service programs, this dissertation will seek to frame the analyses presented here in the context of the contribution(s) policy research and policy researchers may offer in such settings. These projects assigned to ACS' policy research shop

as part of the community-based reform strategy which are reported here include work to examine:

1. Methods to shift resource allocations in Community-Based child and family service systems using Community Risk Scales.
2. Use of qualitative case review tools to assess service needs for children and families within community-based service networks.
3. Integration of Community Need measures into event history models of Outcomes for children in foster care.
4. Integration of quality of care and program Compliance/Timeliness measures into event history models of Outcomes for children in foster care.

Results from these projects will be synthesized to identify common strategies that can be used to guide evaluators, managers, researchers, and advocates working in or affected by agencies contemplating shifting to neighborhood-based services. While the research presented in these projects emerges from a single large child welfare service district, the methods and data sources described here should have application in a wide range of social, educational and health service settings. If effective, these methods could help service systems target available resources to communities with greatest need and identify services and/or providers offering the most effective outcomes for all clients. Further, in considering the roles played by ACS' policy research team in conducting these and other analytic tasks in support of the reform process, this research may offer broader insight into the strengths and limitations of such work in these settings.

The research outlined here offers significant potential contribution to existing methodologies for examining vulnerabilities, service needs and evaluating outcomes in community-based child and family services [Kamerman and Kahn, 1990; Duquette, Danziger, and Seefeldt, 1997]. These issues are important given the continuing calls for improved accountability, performance and outcomes measures facing many large, public child welfare agencies. These questions gain special import at a time when many of these systems are simultaneously implementing shifts away from traditional, centrally managed systems of organization, and decentralizing responsibility for their vital services to community-based organizations.

The first two analyses described above provide quantitative and qualitative approaches that can be used in a variety of health, education, and social service settings to better target available resources to match needs in particular communities. It should be noted that, if successful, such work would have at least indirect impact on the overall effectiveness of these services since it would support allocation of resources that would maximize the marginal benefit of available funds [Samuelson and Nordhaus, 1997; Arrow, 1971; Bebbington and Davies, undated (a)].

The final two analyses described here could provide valuable insight into the data sources and methodologies available to evaluate outcomes in community-based child and family programs. Specifically, these analyses seek to expand existing quantitative outcomes models, integrating them with measures of community need and service quality [Wulczyn, Orlebeke and Melamid, 2000]. These analyses seek to incorporate broader measures of child and family needs into the existing models, and provide validation of qualitative review tools independent of the consensus methods used in their development. This work has the goal of

identifying measurable indicators that could signal positive outcomes for vulnerable children and their families. Simultaneously, this analysis might identify other data that could be incorporated into the quantitative outcomes models to reduce unexplained variance and improve validity of these measures. By directly relating variables from standard case records to well designed measures of program outcomes, this research may provide the initial steps towards the development of improved assessment technologies which could be used with individual children and families in a variety of community-based service settings.

As can be seen in Figure 1, the analyses presented in this work rely on data from a variety of sources which are only partially overlapping or linkable. Particularly notable are the sources of data used in the final two analyses—while the paper “Integrating Community Need into Outcomes Evaluations” uses the foster care outcomes and community need scale data only, the final paper “Integrating Process and Quality Data in Outcomes Evaluations” supplements these two sources with data on foster care program Quality of Care and Compliance/Timeliness measures. Also notable in this work is the inability to integrate the data on child and family needs from the Matching Needs and Services analysis with the other datasets at this time.

Figure 1. Overview of Analyses and Data Sources used in this Dissertation.

Agency Project Title:	Community Service Resource Allocations	Matching Needs and Services Analysis	ACS/Chapin Hall Event History Models	Program Evaluation System	Contract Agency Performance Evaluations
Data Generated:	Community Need Scales	Service Planning	Foster Care Outcomes	Quality of Care	Process/ Timeliness
Research Papers Contained in this dissertation:					
Resource Allocations in Community Services	X				
Matching Needs and Services		X			
Integrating Community Need into Outcomes Evaluations	X		X		
Integrating Process and Quality Data in Outcomes Evaluations	X		X	X	X

The range of work presented here may contribute to a broader understanding of how services can be designed and integrated to better meet the multiple and complex needs of at-risk children, families, and communities [Kamerman and Kahn, 1990; Schorr, 1997]. To be effective, integrated, community-based service systems require comprehensive, comprehensible, integrated information systems and research methods which can support the design of services that appropriately reflect child and family service needs, that fairly and appropriately allocate resources to support these services, and that evaluate services to ensure they effectively meet the needs of vulnerable children and families. Thus, while the work

presented in this dissertation does not explicitly address the structure, design and implementation of integrated, community-based service models, it does seek to explore a variety of analytic issues and methodologies which may be vital in supporting the development and ensuring the effectiveness of such models.

Chapter 2. Background and Literature Review

Child and family services encompass three principal areas of focus [Pecora et al., 1992; Burnam and Melamid, 1995]:

- Protection-- investigation of reports of child abuse or neglect and determination of services and interventions necessary to ensure safety of children;
- Prevention-- services to prevent occurrence or recurrence of child abuse/neglect, to reduce incidence of foster care placements, and to preserve and strengthen family integrity; and
- Placement-- out-of-home services through foster care, adoption and/or legal guardianship for children unable to remain with their families.

Child and family service systems across the United States are increasingly focusing on the community context of their services [Robertson and Wier, 1998]. This shift toward community-based services is reflected in such national reform models as the Annie E. Casey Foundation's Family-to-Family model and the Edna McConnell Clark Foundation's Community Partnerships for Child Protection [Annie E. Casey Foundation, 1999; Edna McConnell Clark Foundation, undated]. It is also reflected in major community-based service reforms in Los Angeles and New York City, the nation's two largest child welfare service districts [Scoppetta, 1996; Bock, 2001]. While these reforms employ different strategies and emphasize different aspects of child and family service practice, they all focus on enhancing the important roles that community residents and community-based service providers play in addressing the needs of vulnerable children and their families.

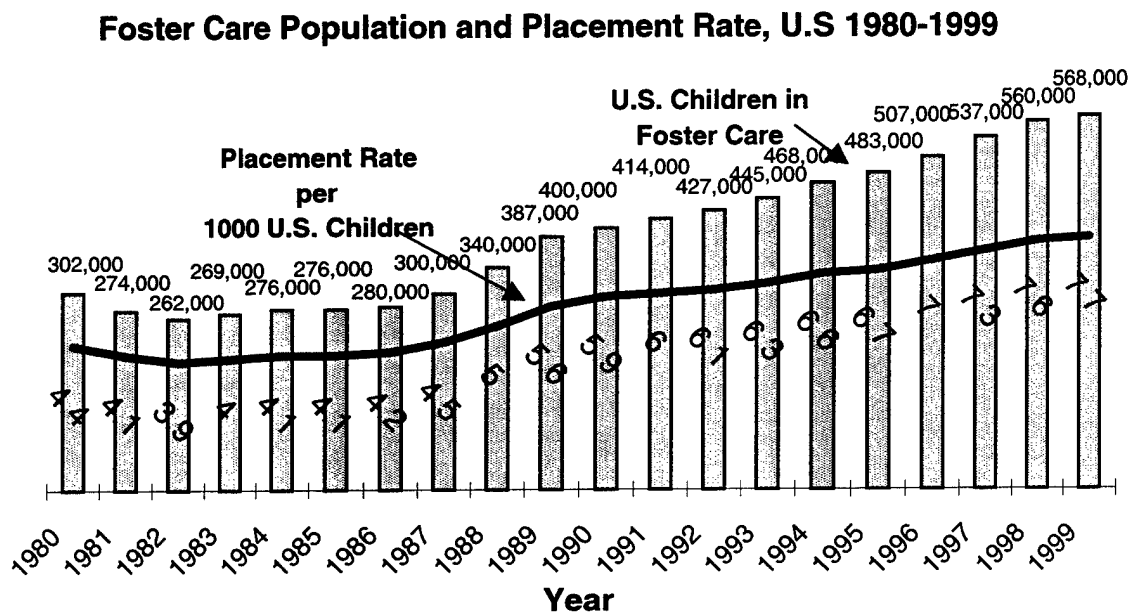
Incidence of Child Maltreatment: The need for additional work in this area is substantial, and child abuse remains one of the most pernicious public policy issues in America. Data for 1998 show that 2.8 million reports of possible maltreatment were made to child welfare agencies in that year; approximately two-thirds of these reports were investigated, and 903,000 children were estimated to have been victims of abuse or neglect. The incidence rate of children being substantiated as victims of abuse or neglect dropped to 12.9 per 1,000 children in 1998, continuing a downward trend that began in 1993. [Federal Green Book, 2000, p. 53]

The 3rd National Incidence Study of Child Abuse and Neglect estimates that approximately 42 out of every 1000 U.S. children are endangered or harmed by abuse or neglect in a given year [Sedlak and Broadhurst, 1996, p. 3-18; National Center on Child Abuse and Neglect, 1988]. Unfortunately, only 39 percent of abused and 28 percent of neglected children came to the attention of child protective services authorities in this review, even though a large majority of children either endangered or harmed had been known to other investigative agencies or professional service providers, such as schools, hospitals or police agencies (Sedlak and Broadhurst, 1996, p.7-32). An even more disturbing reflection of the stress on child welfare systems is the apparent inability to respond to rising abuse and neglect rates: the share of children suffering harm who came to the attention of child protective services dropped by a statistically significant 44 percent investigation rate from levels reported in earlier incidence studies, with even greater fall-offs among children who were most seriously harmed (Sedlak and Broadhurst, 1996, p. 7-19).

Foster Care Placement: As can be seen in Figure 2, Foster care caseloads in the United States grew 42 percent from 1990 to 1999; 568,000 American children lived in out-of-

home foster care at the end of 1999 [Federal Green Book, 2000]. This pattern represents a growth trend that has extended for 15 years [Children's Defense Fund, 1998; Department of Health and Human Services, 1999]. At any point in time approximately 7.7 out of 1000 U.S. children are in foster care placement [Federal Green Book, 2000].

Figure 2. Foster Care Population and Placement Rates Per 1000 Children 0-18 in the United States (Source: Federal Green Book of Entitlement Programs, 2000)



Increasingly, analysts are focused on the “dynamics” of foster care populations—how children move into, through, out of, and back into foster care [Wulczyn, Bruner, and Goerge, 1999]. Such analyses allow deeper understanding of foster care systems, and provide much more useful information for policy makers, managers and advocates interested in these systems. One implication of these studies is to clarify the prevalence of foster care placement—Pecora et al. [1992] emphasize that the total number of children who experience foster care placement within a given year can be 20 to 50 percent higher than would be indicated by point in time estimates [Pecora et al., 1992, p. 323-4; Tatara, 1989].

While the majority of families come to the attention of child welfare agencies as a result of abuse/neglect reports, numerous studies reveal a more complex portrait of their characteristics. Research has consistently indicated that 30 to 40 percent of children in foster care have serious and persistent health problems; that 30 to 40 percent have diagnosable mental illnesses; and that as many as 80 percent are developmentally delayed [Halfon et al., 1994]. Other researchers have noted that 70 percent of children in foster care come from families where one or more members are substance abusers [Roberts, 1999]. Research has also generally revealed the significant educational challenges facing children in foster care [Melamid, Kovach, Barth and Rubbo, 1999; Conger, 1999]; that adults with experiences in foster care are disproportionately likely to enter the criminal justice system [Widom, 1991], to become homeless [Koegel, Melamid and Burnham, 1991], and to use public assistance [Courtney, 1994; Courtney, 1998; Burnham and Melamid, 1996]. It is also widely held that children of color are disproportionately represented in these systems, experience poorer outcomes and receive lower quality of care than caucasian children, though few studies adequately control for the impacts of economic and social well-being on this relationship [Courtney, Barth and Park, 1996].

Funding Child Welfare Services: Not surprisingly, the growth in abuse/neglect and foster care placements has generated large increases in funding for child welfare services. Total annual Federal, state and local expenditures on child welfare services, including child protection, preventive and foster care services, are projected to reach \$16 billion in 2001 [Child Welfare League of America, undated]. Federal funding for Child Welfare represents approximately 44 percent of total expenditures in this area, and is derived from several major sources, including entitlement funding for Title IV-E Foster Care and Adoption Subsidy, as

well as dedicated budget allocations for Independent Living and Training funds, Title IV-B Family Support Services, and Title XX Social Service Block Grant streams [Green Book, 2000]. As can be seen in Table 1, Federal expenditures on child welfare services have grown by large amounts over the past decade, and are projected to continue substantial growth in the future.

Table 1. Federal Child Welfare Expenditures, all Sources, 1990-2005 [Source: Federal Green Book of Entitlement Programs, 2000].

	Total Federal Child Welfare Expenditures (Millions)	Annual Percent Change
1990	\$ 1,912	
1991	\$ 2,328	21.8%
1992	\$ 2,796	20.1%
1993	\$ 3,171	13.4%
1994	\$ 3,522	11.1%
1995	\$ 3,989	13.3%
1996	\$ 4,153	4.1%
1997	\$ 4,884	17.6%
1998	\$ 5,027	2.9%
1999	\$ 5,491	9.2%
2000(estimate)	\$ 6,081	10.7%
2001(estimate)	\$ 6,911	13.6%
2002(estimate)	\$ 7,216	4.4%
2003(estimate)	\$ 7,766	7.6%
2004(estimate)	\$ 8,456	8.9%
2005(estimate)	\$ 9,213	9.0%

Fiscal and Management Reform in Child Welfare: One element clearly recognized as driving the need for system reform is how the system is currently financed, and the incentives this creates. In particular, the work of Fred Wulczyn has highlighted the need to consider and implement fiscal reform strategies, at the Federal, State and local levels [Wulczyn, 2000]. The most widely discussed of these fiscal reform strategies are various forms of managed care and contract based, privatized services designed to introduce greater

flexibility in how funding can be used while incentivizing improved outcomes for children and families [Wulczyn and Orlebeke, 2000; Kahn and Kamerman, 1999].

Welfare Reform and Child Welfare: As noted above, these rises in child welfare abuse/neglect reports and foster care placement rates have occurred in the context of substantial drops in public assistance case loads. As can be seen in Table 2, Public Assistance services were provided to 6.3 million Americans in 1999, less than half the level in 1992—the largest welfare caseload decline in history, leaving the U.S. with it's lowest percentage of the population on welfare since 1965 [U.S. Department of Health and Human Services, 2001]. While some research indicates that risk of foster care placement is related to child- and family-risk characteristics, and that low income and public assistance utilization are not so related [Thieman and Dail, 1997] data from the 3rd National Incidence Study of Child Abuse and Neglect show that children in families earning less than \$15,000 per year had maltreatment rates 22 times greater than those from families earning \$30,000 or more [Sedlak and Broadhurst, 1996; Schorr, 1997].

Table 2. Public Assistance Caseloads and Utilization Rates 1992-1999 [Source: U.S. Department of Health and Human Services, 2001]

Fiscal years	Estimated U.S. Population (000's)	AFDC/TANF Recipients	Percent of U.S. Population
June 1992	254,462	13,625,342	5.4
June 1993	257,379	14,142,710	5.5
June 1994	259,935	14,225,651	5.5
June 1995	262,392	13,660,192	5.2
June 1996	264,827	12,644,915	4.8
June 1997	267,346	10,823,002	4.0
June 1998	269,845	8,778,815	3.3
June 1999	272,286	7,187,753	2.6
December 1999	274,076	6,274,555	2.3

Moreover, the pattern since 1996 remains striking: Public Assistance caseloads have fallen 49 percent, while the number of children in foster care rose an estimated 61,000

children or 12 percent [Green Book, 2001]. While some jurisdictions have taken active steps to redirect welfare reform to strengthen child and family services [Berns and Drake, 1999], the rise in foster care placements in recent years would appear to validate concerns raised by many in the child welfare community when welfare reform legislation was considered [Courtney, 1998; Burnam and Melamid, 1995]. Ultimately, the challenges of welfare reform on child and family service systems may fall disproportionately on big cities which have historically had the largest public assistance caseloads, and which may be subject to unfunded mandates, unworkable programs, and inadequate resources imposed by State oversight authorities [Kahn and Kamerman, 1998].

Family Preservation and Support Services: The service strategy that has received the most attention in recent years is probably family preservation or foster care prevention services. Researchers and policy advocates widely expressed rationale for preventive community-based child and family support services is that they can better ensure safety of children in at-risk families, reduce disruption in children's lives associated with foster care placement, and reduce costs to these systems [Ensign, 1991]. These benefits may pertain both to children who may face continuing risk of abuse when they return to their families after being in foster care (over 50 percent of children entering foster care return to their families), and also reduce the one in four incidence of children being replaced in foster care after returning home [Wulczyn, Bruner and Goerge, 1999]. Finally, preventive community-based child and family services are seen as being different in kind from traditional child welfare practices, and better able to meet the overlapping challenges facing vulnerable children and their families [Berliner, 1993; Forsythe, 1992].

However, a large body of research has revealed significant limitations on the interpretability of findings from many of the evaluations conducted in this service area, and have even led to strenuous calls to shift away from this service approach [Saffran, 1997; MacDonald, 1994]. For example, after reviewing a large number of available studies Frankel [1988] found “the lack of control groups, combined with inadequate description of service activities, make it impossible to generalize reliably across programs” (p.145). Similarly, Gelles [1993] found “no data that met even the most minimum standards of scientific evidence that support the claims [that] family preservation ‘works’” (p.559). Other researchers note that the failure to demonstrate effectiveness in these programs may partially be attributed to weak methodology, including small sample sizes, poor control group designs, or inappropriate analytic methodologies, but also likely stems from lack of integrity in many models, including deficient outcome measures and inadequately defined program intervention strategies [Rossi, 1992; Kelly and Blythe, 2000; Epstein, 1997; Rubin, 1997; Henegan, Horwitz and Leventhal, 1996; Schuerman, Rossi, and Budde, 1999; Bruner and Scott, Undated].

Other authors argue that despite the above methodological limitations, some evidence of effectiveness is demonstrable in the published evaluations of community-based child and family service programs. McCroskey and Meezan [1998], while acknowledging that the research literature offers few clear patterns of preventive services reducing risk of child maltreatment or foster care placement, do find that these programs appear to improve child development, family functioning and parenting behaviors. Fraser, Nelson and Rivard [1997] reviewed 28 evaluative studies, and concluded that family preservation services can reduce violent youth behaviors and improve mental health outcomes of participating youth. Other

proponents have suggested integrating family preservation approaches with existing service programs, including child protective services [Walton, 1997], kinship foster care [Berrick, Barth and Needell, 1994], and child care services [McCroskey and Meezan, 1998].

One result of the tension in the research literature on the effectiveness of family preservation and prevention services has been a redefinition of the objectives of these services, generally narrowing their service goals [Courtney, 1997]. For example, Malluccio and Whitaker [1997] argue that the family preservation/child protection debate has been too greatly focused on “either/or” thinking, and that they may reflect practices that should well be included in any child and family service setting, including provision of a complete continuum of care, and whole-family assessments (p.5). Wells and Tracy [1996] similarly suggest that the rationale of preventive services as focused on preventing foster care placement be abandoned, and replaced by a focus on child development and prevention of maltreatment. Kelly (2000) emphasizes the apparent importance of particular service elements, such as emergency resources, transportation, treatment engagement as long as 14 months, reliance on highly skilled providers, and targeting older children for service.

Systemic Reform in Child Welfare: In many respects, the prevention/child protection debate has subsided in the child welfare field in recent years, with many in the field increasingly focused on systemic reform and balancing needs for all at-risk children and families served by these systems [Lindsey, 1994; Congressional Quarterly Researcher, 1998]. Kamerman and Kahn [1990] studied 25 child welfare service districts and programs, finding them highly focused on child protective services. However, these authors also observed that “in none of the locations studied, is there anything resembling a full delivery system encompassing enough of any major innovation and a full range of strategies; the best is still

very circumscribed” (p.142). These authors conclude by calling for integrated, community-based care networks, providing a comprehensive service continuum, effective case management, and supported by the combined resources of different funding streams available to support such work (p.152).

These and other authors highlight several of the major areas of challenge facing systems seeking to create integrated, community-centered networks of care for vulnerable children and families. For example Kamerman and Kahn [1990] note the strong impact categorical funding streams and lack of basic data on services needs have in restricting service integration. Duquette, Danziger and Seefeldt (1997) seek to explicitly build on this work, providing a framework for analyzing child welfare legislation and policies, but also bringing central focus on such challenges as improving casework practice, enhancing service standards, strengthening assessment skills for caseworkers, collaborating and coordinating with other service systems, and developing data and information systems that are coherent, integrated and accessible. In a similar vein, Waldfogel [2000, 2000a, 1998] has focused on the need to improve the ability of child protection systems to assess child and family service needs and provide “differential response” to meet the needs of families with different challenges, relying on community-based service partners to engage and strengthen families.

Issues in Child Welfare Evaluation Methodology: Underlying virtually all the above referenced system reform efforts, including development of methodologically sound managed care systems, are calls for creating comprehensive data on the needs of children in care, the performance of service programs and the outcomes experienced by children and families touched by these programs. Community-based service strategies require new sources of information to ensure that responsibilities devolved to the community level are met, and

that no child or family “slips through the cracks” in the system [Schorr, 1997; Waldfogel, 2000a].

While many leading researchers have contributed effectively to the literature on program evaluation in child and family service settings, few studies had greater impact on program design and policy development in child welfare than Fanshel and Shinn’s longitudinal studies of outcomes from the Casey Family Program [Fanshel and Shinn 1978; Pecora et al., 1992]. Fanshel and Shinn’s work revealed clear relationships between several basic aspects of care and child outcomes, including the roles visitation, child age and ethnicity, family needs, casework quality and the dynamics of a child’s movements in care. This work directly influenced the development of some of the most basic practices underlying much of foster care today, including permanency planning, visitation policies, and serving children in least restrictive settings [Green Book, 2001; Pecora et al., 1992]. However, even Fanshel and Shinn felt their comprehensive, multi-year study was unable to capture vitally important elements of the impact of foster care placement on the children and families living through it and recognized the need for more focus on evaluation methods [1978, p. 479].

Several authors have suggested frameworks to structure and guide the development of high quality evaluations of child and family services [Connell et al., 1995; Fulbright-Anderson, Kubisch and Connell, 1998]. Courtney [1993] highlights the importance of foster care evaluations including measures of program structural characteristics (including physical plant, staff ratios, and staff qualifications/training), program process characteristics (including timeliness of assessment and treatment planning, and quality and timeliness of all casework contacts and visitation), and child and family outcomes (including reunification, reentry, adoption, and transfer/absence from care events) as well as client behavioral, emotional, and

attitudinal shifts and client satisfaction measures. However, this author acknowledges that such comprehensive reviews are particularly challenging given the lack of child and family need assessment tools with test-retest validity, the complexity and cost of comprehensive evaluation, and the diversity and lack of standardization in case reporting practices [Courtney, 1993, p.28; Magura and Moses, 1986].

There are a number of reasons for the relative absence of child and family well being measures in these evaluations, including the difficulty of defining and measuring clinical and service needs, reluctance on the part of researchers and program managers to use tools which might negatively label children and families and/or set unrealistic expectations for systems to “fix” children and families with severe, complex and the long-standing problems [Altshuler and Gleeson, 1999, p.128]. Development of client need assessment tools and implementation of comprehensive program evaluation systems in child welfare requires researchers and program managers to balance organizational culture and evaluation methodologies [Usher, 1995]. Ultimately, development of comprehensive need assessment and risk management systems may well represent the most substantial challenge facing child welfare systems today [Gambrill and Shlonsky, 2001].

Integrating “Qualitative” and “Quantitative” Methodologies: While much of the data required for evaluation, needs assessment and resource allocation in these settings might be derived from administrative data systems, any reform effort requires a full range of information and reporting resources including well designed and implemented clinical assessments [Wulczyn, Orlebeke, and Melamid, 2000; Kahn and Kamerman, 1999; Connell et al., 1995; Fulbright-Anderson, Kubisch and Connell, 1998]. As such, effective evaluation of complex child welfare service systems and programs should be expected to require some

combination of objectively observable, quantitative data, and more subjective, judgment-based qualitative data.

Examples of quantitative, objectively observable data in this arena include child outcomes from care (such as returning home, returning to care, or being adopted from foster care), child and family demographic and service history characteristics, or administrative reports of compliance with and/or timeliness of program operations [Fraser, Pecora, and Popuang, 1992; Wulczyn, Orlebeke, and Melamid, 2000]. Qualitative or subjective data on child and family services may include information from case record reviews, clinical assessments, site observations of program operations, structured interviews with clients and/or staff, and survey data [Hodges, 1997; Kirk and Ashcraft, 1998].

The two most comprehensive sources of data available in most child welfare service systems are administrative data and case records. Since administrative data systems in child welfare agencies typically have only minimal qualitative data on the service needs and life experiences of the children and families served by these agencies, they can be only a starting point for understanding the complex and dynamic needs and experiences of the children and families who typically come to the attention of child welfare authorities [Wulczyn, Orlebeke, and Melamid, 2000]. Supplementing administrative data with qualitative information provides a “three dimensional” portrait of the challenges facing families, and of the service strategies that might better meet these challenges [Usher, Gibbs and Wildfire, 1995; Altshuler and Gleeson, 1999].

Collecting valid qualitative data on the multi-dimensional and changing issues facing at-risk children and their families is difficult and costly, requiring careful attention to

methodology, which can reduce the scope of what can be reliably examined. Even when high quality qualitative information is collected, results can be difficult to summarize and communicate to line staff and clients. Finally, these approaches rarely reflect the voice and perspectives of line staff, managers, parents, children and others who have substantial day-to-day experience in how child welfare services work, and the needs of children and families served by these systems.

Themes Emerging from the Research Literature

The research reviewed in this chapter presents a number of significant themes which indirectly or directly underlay the research presented in this dissertation. Perhaps the broadest theme emerging from the literature is the sizable incidence of child abuse and neglect and foster care placement in the United States, which has led to increased public attention and funding for this service domain. Research also consistently demonstrates that vulnerability is not randomly distributed among U.S. children--families and children living in poverty, having health and mental health needs, involved in substance abuse, homeless, or touched by the juvenile justice system may all have significantly increased risk of experiencing abuse/neglect and foster care placement.

Also notable across the research presented here is significant debate on how best to design and structure services to at-risk children and their families. While there are many conflicting voices in this work, there does appear to be support for the potential for integrated, community-based services to provide marginally effective services to families impacted by a variety of service needs.

The research literature also highlights the importance of rigorous evaluation methods. Courtney [1993] offers a comprehensive review of the elements vital to effective evaluation in child and family services, including consideration of program structures and service process in evaluating child and family outcomes. Courtney also highlights the importance of adjusting models to reflect patterns of risk and need for all children and families served by these programs, including client behavioral, emotional and attitudinal strengths and challenges, as well as measures of client satisfaction. The final two analyses presented in this dissertation explicitly address several aspects of Courtney's evaluation model, including the roles risk adjustment may assume in program evaluation, and how including measures of administrative process and service quality may affect observed foster care outcomes. However, the measures used in the evaluation work presented here fall considerably short of the kind of comprehensive child and family well-being and client satisfaction measures contemplated by Courtney and other researchers.

Given the observed lack of exemplars of comprehensive, integrated, demonstrably effective community-based service systems, a number of leading researchers in the field have explicitly sought to identify areas of research which could provide more context and direction on the range of issues important when undertaking reform in child and family service systems [Kamerman and Kahn, 1990; Duquette, Danziger and Seefeldt (1997); Waldfogel (2000)]. These researchers point to a range of issue areas which must be considered in systems reform, including attention to funding streams, administrative data and other information systems, casework practices, service standards, assessment skills and techniques, collaboration and coordination across service systems, strengthening child protection service systems and

designing and implementing “differential response” structures to meet child and family needs comprehensively and effectively.

The analyses presented in this paper address certain of these systems design and systems reform issues, including resource allocations and design of service structures and programs that can best meet child and family needs. However, a range of other issues identified in the research literature as important to community based systems reforms are not explicitly addressed in the work presented here. The most notable “gaps” in what is discussed in this work relative to the research literature seem to concentrate around the domains of implementing and managing social service programs, including such issues as clinical assessment technologies, case management practices, and staff and organizational development. In a sense, then, the range of projects presented here may represent the “front end” of the reform process, including resource allocations and strategic service design, and the “back end” of the reform process as reflected in program evaluations, but have less to offer regarding the actual implementation and management of these programs.

Chapter 3. Research Questions and Elements of this Research

Background: The research presented here arises from four analytic approaches used in the nation's second largest child welfare service district, the New York City Administration for Children's Services (ACS). As noted above, these analyses were each undertaken under the aegis of ACS' Office of Management Development and Research, as central elements in the agency's community-based service reform initiative, from 1996 to 2000 [Scoppetta, 1996; Melamid, Kovach, Barth and Rubbo, 1998]. This office was newly created under this reform initiative, and held lead agency responsibility for policy research, data analysis, program evaluation and program development within ACS. At its most basic level, then, the rationale underlying why these specific projects are presented in this work is that these projects are the work policy researchers were "asked" to undertake as part of the reform process.

In fact, the projects reflected in this dissertation reflect a subset of the key activities associated with the reform process in this large jurisdiction, a process whose complete scope was developed through intensive consultation with a wide variety of system stakeholders, including political leaders, advocacy and research organizations, client advocacy organizations, and plaintiffs in a variety of legal actions relevant to the agency. The selection of projects presented in this dissertation thus represent certain key responsibilities assigned to ACS policy researchers in this reform effort. In a sense then, the scope of work presented here directly reflects the judgment of agency leaders in this jurisdiction as to the appropriate roles policy research can or should play in such reform efforts, informed by the values a wide range of actors involved in the reform process hold towards the roles policy research plays in

such settings. These analyses are summarized in the following four chapters of this dissertation.

Contrasted against the themes identified in the literature, the scope of policy research initiatives undertaken in this jurisdiction seems to reflect several of the central themes emerging from the above review of the literature in this area, including: (a) attention to the allocation of funding and staff resources to support community-based networks of care; (b) strategic planning to design services appropriate to client needs and risks, and (c) incorporating risk adjustment and service process measures within program outcome evaluations of community-based service systems. However, the literature appears to suggest a number of areas of research focus that are not explicitly reflected in the projects undertaken by ACS policy research staff. In particular, the projects presented in this dissertation appear to be only indirectly relevant to many issues central to implementation and management of service programs suggested within the literature, including as casework practices, staff training and development, service standards, and clinical assessment technologies.

Conceptual Framework: Within the research literature cited above, the most comprehensive framework for developing and examining evaluation strategies in child welfare settings appears to be the work of Courtney [1993]. Figure 2 aligns the multiple sources of information included in this dissertation to this domains identified in Courtney's evaluation framework. As can be seen, the data to be presented in this work largely align with the elements of Courtney's comprehensive indicator-based approach to measuring outcomes in Foster Care services, though many of these measures are identifying areas that are and are not encompassed within the Courtney framework.

Figure 2. Comparison of Research Projects presented in this dissertation with Courtney's Child Welfare Services Framework [Source: Courtney, 1993].

Information Domain	Evaluation Domain	Indicators	Data Sources in this Research
Structure	Program Structural Characteristics	<ul style="list-style-type: none"> • Physical Setting • Staffing Levels/Caseloads • Staff Qualifications • Program Type • Financial Supports 	<ul style="list-style-type: none"> • Administrative Data—program type • Quality of Care data — Basic Welfare subscale • Compliance/Timeliness data —Fiscal Management
Process	Program Process Characteristics	<ul style="list-style-type: none"> • Timely Treatment Planning • Comprehensive Assessment/Diagnosis • Visitation/Casework Contacts 	<ul style="list-style-type: none"> ▪ Quality of Care data—Visitation, Assessment, Reunification Services, etc. ▪ Compliance/Timeliness data—Timeliness and Efficacy Scales
Child/Family Outcomes	Case Status Measures	<ul style="list-style-type: none"> • Reunification • Adoption • Level of Care/Service • Absences from Care 	<ul style="list-style-type: none"> • Outcomes Data—Reunification, Re-Entry and Adoptions
Client Needs/Risks	Client Status Measures	<ul style="list-style-type: none"> • Client Safety • Behavioral Changes • Emotional/Physical Health • Educational Status 	<ul style="list-style-type: none"> • Matching Needs and Services Analysis • Community Risk Scales
Client Satisfaction	Client Satisfaction	<ul style="list-style-type: none"> • Surveys, Focus Groups, Interviews 	<ul style="list-style-type: none"> • Matching Needs and Services—Client Validation Cycles

As can be seen in the last column of Figure 2, the data available in this service setting appears to align well with several of the domains suggested by Courtney. In particular, this agency has developed a series of event history survival analysis models designed to provide comprehensive Outcomes Evaluations, which provide a range of Case Status Measures. In addition, these models are able to control for many Program Structural Characteristics, as these are substantially determined by the service program in which children are placed, as established by State regulations in this jurisdiction.

Research Questions: The four research projects presented in this dissertation each explicitly seek to build on these established models, exploring methods and data sources by which evaluators may more comprehensively assess program performance. One domain explored in this work is the incorporation of improved “Client Status Measures” into child and family service evaluations. This domain is explicitly explored in each of the projects described here, including the development of community-level risk scales, and review of a qualitative case review tool which endeavors to identify system level patterns of need among service populations. The third analysis presented in this paper extends this analysis, exploring the use of these community-level risk data within program evaluation models.

A second domain suggested by Courtney explored in this dissertation are “Program Process Characteristics”. The final analysis presented in this dissertation uses data from two program evaluation systems operating in this setting, exploring how agency-level performance in the areas of Compliance/Timeliness and Quality of Care are related to and/or effect outcomes experienced by children and families served by these systems.

The “Client Satisfaction” domain is not explicitly considered in the analyses presented here—though ACS has attempted to develop reliable measures in this area, no consistent or reliable data are available in this service agency at this time [Wells, 1999]. However, the Matching Needs and Services method does include “client validation” processes, whose potential role in providing external validation for agency service planning.

Overview of the Research Projects

1) Developing Community Risk Scales to estimate need for Community-Based Child and Family Services.

One challenge in implementing community-based services is to understand risks and vulnerabilities facing children and families across communities within a service district. Such information is vital not only to support equitable allocation of staff and funding resources to communities being served, but also to deepen understanding of the needs and challenges facing different neighborhoods. While evaluation of community-based services has received increasing focus in recent years, little attention has been paid to the issue of community-level needs assessment and how the allocation of resources maximizes the marginal benefit of each dollar invested, equalizes access to services for all needy families, and promotes efficacy of program at the systems level [Samuelson and Nordhaus, 1997; Arrow, 1971; Bebbington and Davies, undated (a)]. This work explores methodological and programmatic issues in measuring and enhancing service needs in community-based services, using a case example from ACS.

This research presents two interlocking strategies for considering service needs and funding equity—resource allocation formulas and model budgets for funded programs. The results of this analysis demonstrate that relatively simple analytic techniques can be effective in measuring risks across communities and in improving funding equity across multiple providers operating within a community-based service network. A wide range of social and health service systems could use these approaches to ensure that available resources are targeted to communities and clients with the greatest measured need.

2) Matching Needs and Services: an Outcome-Based Needs Assessment Tool for Community-Based Service Systems

Assessing Need and Evaluating Outcomes in Community-Based Services

This research presents results from a strategic planning process used to analyze service needs at the community level. The Matching Needs and Services (MNS) method, developed by the Dartington Social Research Unit in England, seeks to identify patterns of need among children and families in a given community, using statistically valid sample designs and rigorous methodology [Dartington, 1999]. This process uses small teams of staff from social service systems to review a representative sample of case records from a given community. Teams seek to identify primary service needs of a defined target population and formulate recommendations for best meeting these identified service needs. It is explicitly assumed that the MNS review will inform the structure and operation of the services delivered to clients, and that including the voice and perspective of staff and clients directly involved in these systems will yield more effective analysis and more useful data to support service enhancements.

This paper presents an overview of the MNS methodology, as well as a detailed case example from the implementation of this approach by the Administration for Children's Services (ACS) in New York City, which is using the MNS methodology as a central component of its newly implemented Neighborhood Based Services strategy [Scoppetta, 1996]. This paper presents results from ACS' pilot review conducted using the MNS methodology, and examines the issues involved in implementing strategies emerging from this planning process. Finally, this work offers recommendations for how this approach may be used in a social, health and education service settings where there is need to clarify service needs and better target resources to meet the needs of vulnerable children and families.

3) Effects of Community-Level Needs on Foster Care Outcomes

The impact of community-level needs on outcomes for children in foster care is explored by building upon evaluation tools previously developed by the New York City Administration for Children's Services (ACS) [Wulczyn, Orlebeke and Melamid, 2000; Melamid, 2000]. These measures use event history analysis to evaluate the amount of time children spend in care prior to experiencing (a) reunification with their family, (b) adoption or (c) return to care after having been reunified. This analysis augments these evaluation models, adding calculated community need scores derived from the above equity analysis, for each of 59 community districts within the service area of this agency for each child reflected in these base models.

Incorporating community need into these models may offer insight into both policy-level and methodological issues that arise in the implementation and evaluation of community-based foster care services. Methodologically, this analysis explores the use of these community need scores as a proxy for child and family level risk adjustment to the original evaluation model. At the policy level, this analysis will seek to assess the impact of community context on the outcomes children and families experience in foster care.

4) Integrating Qualitative and Quantitative Data in Evaluating Social Services

As noted above, there is wide recognition among those interested in child and family services of the lack of consistent, reliable, meaningful evaluation in many programs [Fraser, Pecora, and Popuang, 1992; Bruner and Scott, Undated; Frankel, 1988]. Calls for greater accountability are rising among many child and family service systems, including greater emphasis on "managed care" strategies that can better ensure that funds expended to care for vulnerable children are used in the most effective manner possible [Westat, 1995]. Such

help these systems better understand what is working, for whom, and at what cost [Courtney, 1993].

A basic tenet of social science program evaluation is *triangulation*—the use of multiple, well-designed measures to enhance and confirm the validity of evaluation scores for any subject [Campbell and Fiske, 1959; Crano, 1981; Greene and McClintock, 1985; McClintock and Greene, 1985]. Combining multiple approaches provides more accurate overall evaluation results, and provides a more complete portrait of how services work, making results more useful to staff, management, clients and advocates. While data available in this setting will not support a comprehensive analysis of the power of triangulation in evaluation in these settings, this work will consider the issues involved in evaluating foster care services, to identify the broad strategies available to managers, evaluators, advocates and clients who wish to better understand the effectiveness of different programs they are operating. It does so by examining and comparing data from three evaluation approaches used by the New York City Administration for Children's Services foster care system:

1. Compliance/Timeliness measured by ACS' *Contractor Overall Performance Evaluation System*. Data for these indicators are collected through administrative review processes across several management units within ACS, and fall into three broad categories—timeliness of completion of casework activities, success or failure in achieving key service objectives, and assessments of fiscal management.
2. Quality of Care measures collected through the *Program Evaluation System (PES)*. Developed over many years by external researchers, the PES seeks to identify “meaningful differences in agency performance” using methodologically rigorous case

record reviews, structured interviews and field observations [Wells, 1999]. For each reviewed program, the PES collects hundreds of indicators across three conceptual domains or subscales: Basic Welfare; Normal Growth and Development; and Process. These data are collected by dedicated teams of evaluators, who review a statistically valid sample of case records in each foster care agency.

3. *Quantitative outcome indicators*, jointly developed by ACS and the Chapin Hall Center for Children at the University of Chicago, rely on administrative data to evaluate key outcomes experienced by children in foster care [Wulczyn, Orlebeke, and Melamid, 2000]. These measures use event history analysis to evaluate the amount of time children spend in care prior to experiencing (a) reunification with their family, (b) adoption or (c) return to care after having been reunified. These models control for demographic and placement history characteristics recorded in the ACS database, producing performance scores for every reviewed agency for specific cohorts of children in care, and incorporate controls for community needs developed in the paper described above.

Conclusions, Cross-Cutting Issues and Future Steps

The final chapter of this dissertation summarizes issues identified across these papers, focusing on major themes emerging from these disparate works. One set of cross-cutting themes explored in this final section focuses on methodological issues that emerge from the variety of analytic tools and methods used in these analyses. In particular, these themes seek to synthesize key issues which arise as analysts seek to integrate multiple sources of both quantitative and qualitative data to support the complex and dynamic needs of designing, implementing, managing and evaluating community-based child and family services.

A second set of cross cutting issues addressed in the final section of this dissertation focus on the policy level, seeking to identify major themes relating to policies, organizational structures and service practices suggested by these papers. While the analyses presented in this dissertation can only represent a small share of the issues and methods available to support the development of integrated, community-based services, these analyses may offer some insight into and support for strategies that can better meet the needs of vulnerable children, families and communities.

Finally, the concluding section of this work will offer suggestions for future work in this area which might deepen our understanding of strategies that can support effective services to families and children facing complex, multi-dimensional and changing needs. This section will also consider briefly the range of policy research presented in this dissertation, and the roles policy researchers played and could have played in the broader reform initiative taking place in this agency at this time.

Chapter 4. Using Community Risk Scales to Allocate Resources for Community-Based Child and Family Services

Introduction

Public policy researchers have increasingly focused on the complex challenges of evaluating outcomes in community-based service programs [Rossi, 1992; Kelly and Blythe, 2000; Epstien, 1997; Rubin, 1997; Henegan, Horwitz and Leventhal, 1996; Schuerman, Rossi, and Budde, 1999; Bruner and Scott, Undated]. These efforts have increased recognition of the importance of high quality evaluation in community service initiatives, and also raised awareness of the many challenges facing evaluators in this area.

One aspect of evaluating community-based services that has received less attention is resource allocation: evaluating how the distribution of funding and staff resources maximizes the marginal benefit of each dollar invested in a given social program, increasing the fairness of access to community-based services for all needy families in a given service jurisdiction [Samuelson and Nordhaus, 1997; Arrow, 1971; Bebbington and Davies, undated]. In this sense, then, this paper considers *equity* as reflected in inputs or resource distributions that best match community indicators of need, as well as the fair and participatory nature of decision making processes which effectively and transparently leads to the implementation of resource distributions that best match observed and agreed upon standards of need across service districts. This paper explores methodological issues in measuring and improving fairness in resource allocations for community-based service programs, using an example from the nation's largest child welfare preventive service program.

Preventive child welfare or Family Preservation programs serve families with children at imminent risk of foster care placement, and promote more timely and more stable return

home for children currently in foster care [Forsythe, 1992]. Preventive services have seen substantial growth in recent years, fueled by a 132 percent rise in Federal funding for preventive service programs from 1990 to 2000 [Federal Green Book of Entitlement Programs, 2001]. Annual Federal funding for these services now totals \$587 billion, and a 1995 review identified 60 major preventive programs operating in 22 states [Westat et al., 1995].

The most commonly offered rationale in support of these services is that they reduce disruption in children's lives and save money by preventing foster care placements [Ensign, 1991]. Foster care caseloads in the United States grew 42 percent from 1990 to 1999; 568,000 American children currently live in out-of-home foster care [Green Book, 2001; Children's Defense Fund, 1998; Department of Health and Human Services, 1999]. It is also notable that more than half of children entering foster care are eventually returned to their families, and almost one in four discharged children return to care [Wulczyn, Bruner, and Goerge, 1999]. Preventive service advocates argue that by working with the entire family they can better ensure safety of reunified children and reduce risk of replacement in foster care [Wells and Tracy, 1996]. Finally, preventive services are seen as being different in kind from foster care, and as better able to meet the overlapping challenges facing vulnerable children and their families [Forsythe, 1992]. While the majority of children enter foster care as a result of abuse/neglect petitions, numerous studies reveal a complex portrait of the characteristics of these children and families. [Halfon et al., 1994; Melamid et al., 1999; Conger, 1999; Widom, 1991; Koegel, Melamid and Burnham, 1991; Burnham and Melamid, 1996].

While equity has been a major area of focus in education finance and other fields, there has been less attention to resource allocation in social services [Berne, 1988; Hertert, Busch, and Odden, 1994; Odden, 1998]. Undertaking research into equity in child and family service systems appears to present two key challenges: wide disparity in values and beliefs as to the goals and objectives of these systems across the diversity of actors who impact on or are impacted on by these services, and significant challenges in collecting data and evaluating risk, need and strengths across all communities and populations served by these programs.

These issues are explored here through two approaches developed by the New York City Administration for Children's Services (ACS) in distributing preventive service funds to community-based contract service providers. This paper argues that readily accessible methods can be used in many health or social service settings to allow available funds to be targeted to families and communities most in need.

Methodology

The ACS Neighborhood-Based Services initiative offered a unique opportunity to re-examine service allocations across 59 community districts in New York City. This effort focused on two elements: (1) a resource allocation methodology to promote *input equity* by distributing available preventive service funds to communities in accordance with their service needs relative to other communities, and (2) a "model budget" funding system to enhance *unit cost equity* across all provider agencies.

Community Resource Allocations: ACS' existing allocation formula for preventive service slots used only two indicators--abuse and neglect reporting rates and foster care placement rates for each community district, with foster care placements double weighted.

While this formula reflects the key areas of focus for preventive services—reducing the

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incidence of child abuse and neglect and of foster care placements—they were seen as having important limitations. One concern surrounded under-reporting of child abuse, particularly in communities with large immigrant populations, communities underserved by mandated child abuse reporters, or where language or cultural barriers mitigate against some community members reporting vulnerable children to the authorities. In addition, ACS wanted to use broad measures of community need to reflect the full range of challenges facing vulnerable children and families. Finally, using a broader range of indicators was seen by ACS as a way to reflect the important contributions of community-based health and social service providers in directly and indirectly reducing foster care placements by supporting the needs of at-risk families.

A variety of health and social indicators are available at the community district level in New York City. The Citizen's Committee publishes one very useful compilation of child well-being indicators biennially for Children, a leading child and family services advocacy group [Citizen's Committee for Children, 1997]. The Citizen's Committee report aggregates scores across seven child well-being scales into community risk quintiles, assigning each of New York City's 59 Community Districts a separate rating on each scale. These scores provide relative rankings of child well-being in each community district across the seven scales.

These scales presented two clear advantages. First, while social indicators or population estimates such as these are difficult to measure, these data were all produced by Federal, State or City administrative bodies but were aggregated into carefully conceived scales. This provided substantial confidence in both the underlying reliability and consistency of the indicators used in this analysis, as well as in the face and content validity of these scales.

Figure 1 presents a listing of the indicators, scales and weights used in this analysis. The second advantage of using these scales was undoubtedly political. Relying on the Citizen's Committee analysis of need allowed ACS to use an independent, replicable approach developed by leading children's service advocates, reducing some of the likely resistance to reallocations in this vital and often contentious service area.

Figure 1: Indicators and Weights used in ACS Resource Allocation Model

Weight in Need Score	Domain	Indicators
25%	Safety	<ul style="list-style-type: none"> • Abuse and Neglect Reports Per 1,000 Children • Indicated Abuse/Neglect Reports Per 1,000 Children • Foster Care Placements Per 1,000 Children
20%	Poverty	<ul style="list-style-type: none"> • Percent of Children Receiving Public Assistance • Unemployment Rate • Percent of Households Below \$10,000 Income
20%	Health	<ul style="list-style-type: none"> • Infant Mortality Per 1,000 Births • Percent of Infants at Low Birth Weight • Percent Mothers With No Prenatal Care
15%	Youth Risk	<ul style="list-style-type: none"> • Percent of Births to Teens • Percent 16-19 Year Olds Unemployed and Not Graduated • Youth Arrest Rate (16-20 Year Olds)
10%	Education	<ul style="list-style-type: none"> • Percentage of Students Grades 2-10 Below Grade Level-Reading • Percentage of Students Grades 2-10 Below Grade Level-Math
7.5%	Community Life	<ul style="list-style-type: none"> • Felony Reports Per 1,000 Residents • Abandoned Buildings Scheduled for Demolition
2.5%	Environment	<ul style="list-style-type: none"> • Lead Paint Violations Per 1,000 Children (1-4 years) • Hazardous Incidents Handled Per 1,000 Children

While these well-being scales were seen as a methodologically sound and politically expedient starting point for this analysis, ACS senior management felt some elements of the original scales needed to be modified to better match the needs of this analysis. Of primary concern was the child safety scale, which in the Citizen's Committee analysis included child abuse and neglect reports and reported violent felonies per 1,000 children in the community.

ACS managers noted that this measure failed to include foster care placements and child abuse and neglect indications, important measures of service demand. At the same time the measure of felonies in the community was seen as a less direct proxy for children's safety. As a result, the safety scale included abuse and neglect reports, indicated abuse and neglect cases and foster care placements per 1,000 children in each community.¹

The final step in developing the community needs indicators was to establish a weighting formula for the seven child well-being scales. Weights were developed using a consensus-based, peer review process among members of ACS senior staff, who rank ordered the seven scales by their perceived relation to need for preventive services. Child Safety was given the highest rank order, followed by poverty and health scales, youth risks, education, community life and environment. The highest ranked scale (safety) was given a weight ten times greater than the lowest (environment). The remaining scales were assigned declining weights based on their rank order, as presented in Figure 1. Final allocations were based on these weighted scores, adjusted to reflect the number of children under 18 years of age in each community district. However, to avoid excessive service impacts in any community, ACS made an administrative decision to limit funding cuts in any Community District to no more than 25 percent regardless of the results derived from this allocation formula.

Model Budget: As noted above, a second objective in ACS' Preventive Service funding reallocation was to increase unit cost equity, equalizing funds paid to preventive providers for each "slot" of service to one family for one year. Historically, ACS preventive service contracts were negotiated individually with providers. As a result, the costs of preventive service slots varied substantially, from \$2800 to almost \$8700 per slot per year.

¹ Percentage of clean streets in each community, was also excluded from the environment scale of the CCC
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To remedy these concerns, ACS program development and fiscal staff developed standard model budgets, including setting direct personnel and indirect overhead rates constant across all programs. The ACS model budget also allows reimbursement levels to vary for programs of different sizes, generally providing slightly lower average reimbursement per slot for larger programs. For example, general preventive programs serving an average of 45 families would have an average cost of \$6,877 per family, while the programs serving 165 families would receive average funding rates that are 10.6 percent lower at \$6,148.

The model budget, which was facilitated by a 62 percent rise in overall funding, substantially equalized resources for ACS preventive programs by funding standard salary levels, staffing patterns and support service resources for all agencies. By setting salary levels commensurate with those in directly managed public programs and in contract foster care agencies, ACS also hoped to improve staff recruitment and retention.

Development and Review of Resource Allocations: Throughout the process of developing and implementing the Community Need Scales and Model Budgets, ACS Policy Researchers and Agency Managers undertook a number of specific actions designed to clarify the scope and communicate the implications of revised resource allocations likely to emerge from this work to all organizations and parties likely to be interested in or affected by these changes. The first set of such steps occurred during the development of these measures—the design of these distribution mechanisms was initially developed by teams of managers and staff from a variety of ACS operating units, including policy research, budget, preventive service program development, and community planning and development teams. The initial

values for the scale weights used in the Community Need measures were developed from the mutual consensus of the ACS managers responsible for these operating divisions.

The design and rationale of both initiatives were repeatedly presented to ACS Senior Managers to ensure that all relevant internal parties had the opportunity to address concerns with these strategies before “going public”. In addition, several leading researchers with substantial familiarity with the preventive service system in this jurisdiction provided review and comment on these measures. These reviews resulted in small modifications to some of the specific measures used in the calculation of need scales as described above, but scale weights were left unchanged from those developed by the management team described in the previous paragraph.

Communications with non-profit programs, advocacy organizations and community groups affected by these reallocations were somewhat constrained by the fact that ACS was simultaneously involved in developing and issuing a major Request for Proposals (RFP) designed to implement its neighborhood-based service program. Under City procurement regulations, any discussions regarding information that would be material to this RFP had to take place in public settings at which all interested parties could participate. Given the broad impact of these reallocations and this RFP, it is not surprising that approximately 500 representatives of community organizations attended these public meetings. What was surprising was the reaction of participants to the resource allocation and model budget formulas presented: substantial support for these revised methodologies was expressed by the large majority of participants, and even some representatives of organizations likely to receive reduced funding under the revised formulas.

Results

Table 1 presents a summary of neighborhood allocations for ACS preventive services prior to and after the adoption of the resource allocation formula across each of New York City's five boroughs. As can be seen, the increase in overall funding for this service generated rising service allocations in all boroughs of New York City, ranging from an 11 percent increase in Manhattan to an 85 percent rise in the Bronx. However, this rise in overall funding could otherwise mask the notable shifts in how these funds are distributed--the Bronx, Brooklyn, and Queens got larger shares of total funds, while Manhattan saw a substantial drop in its share.

Table 1. Changes in Resource Allocations across the Five Boroughs of New York City (Dollars in Millions).

	Prior Allocation		Expected Change-Funding	Actual Change-New Formula	Percent Change-New Formula	New Allocation		Change Due to Formula	Percent Change vs. Expected	Population Need Ratio	
										New	Old
Bronx	\$11.30	23.5%	\$7.10	\$9.60	85.1%	\$20.90	26.7%	\$2.50	13.6%	1.36	1.19
Brooklyn	\$16.40	34.1%	\$10.30	\$13.40	81.6%	\$29.80	38.1%	\$3.10	11.6%	1.06	0.95
Manhattan	\$12.40	25.7%	\$7.80	\$1.40	11.2%	\$13.80	17.6%	(\$6.40)	-31.7%	1.21	1.77
Queens	\$6.70	14.0%	\$4.20	\$5.00	74.1%	\$11.70	15.0%	\$0.80	7.3%	0.62	0.58
Staten Island	\$1.30	2.7%	\$0.80	\$0.80	64.0%	\$2.10	2.7%	\$0.00	0.0%	0.48	0.48
	\$48.10		\$30.20	\$30.20		\$78.30					

Table 1 further separates these changes into two factors: the impact of the overall \$30.2 million increase in funding, and the application of ACS' revised allocation formula. This analysis reveals a more complex image of the impacts of this new methodology. As can be seen, the relatively small net increase in preventive service funding in Manhattan results from the new allocation formula; had the revised formula been used but no additional funding been available, Manhattan could have experienced a 31.7 percent drop in funding. At the other extreme, Bronx and Brooklyn experienced increases in total funding, driven by the changes in the allocation formula compounding the large increase in overall funding. On net,

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then, one can see that the ACS allocation formula had the effect of shifting resources from Manhattan to the outer-boroughs of New York City, but that the availability of substantially increased funding for preventive services allowed for service expansion in every borough.

Table 1 also presents population need ratios, calculated by dividing the share of preventive service funds for each borough by the share of the total City population under 18 in that Borough. This ratio provides a measure of the intensity of need for preventive services in each Borough. Children in the Bronx have on average a need for services that is 36 percent greater than the City as a whole, while children in Manhattan and Brooklyn have needs that are 21 and 6 percent greater, respectively. At the same time, children in Queens and Staten Island have lower average need levels (38 and 52 percent below citywide average need, respectively).

Table 2 presents final slot allocations across the five boroughs, estimating the impacts of both the resource allocation formula and model budgets.² Under the new model budget, average reimbursement to preventive service providers per family per year, grew 16.3 percent. Given New York City's 62.6 percent funding increase for preventive services, this increase in model budget costs supported an estimated 39.8 percent rise in the number of families served at any point in time. This allowed for the creation of 3,099 additional service slots Citywide.

On balance, the combination of substantially higher overall levels of funding, reallocation of these funds across neighborhoods, and the use of a model budget formula to equalize resources across service agencies appear to generate very substantial changes in the ACS preventive service program. The Four "outer Boroughs" (Bronx, Brooklyn, Queens and

² Note that figures reported here differ slightly from ACS' actual fund allocations, which are affected by the actual sizes of funded agencies and are subject to contract negotiations. In addition, borough level funding for prior allocations were not available, and are estimated using citywide average cost per slot.

Staten Island) experience rises in service slots of between 40 and 60 percent. However, Manhattan sees a drop of approximately 91 service slots, representing a decline of 4.5 percent in available service capacity for that Borough.

Table 2. ACS Service Slots by Borough, Estimated Allocation under Prior and Revised Allocation Formulas.

	New Preventive Service Slot Allocation	Old Preventive Service Slot Allocation	Change in Service Slots Allocated	
Bronx	2,905	1,829	1,076	58.8%
Brooklyn	4,145	2,660	1,485	55.8%
Manhattan	1,916	2,007	(91)	-4.5%
Queens	1,636	1,092	544	49.8%
Staten Island	293	209	84	40.2%
Citywide Total:	10,895	7,796	3,099	39.8%
Budget per Service Slot:	\$ 7,189	\$ 6,179	\$ 1,010	16.3%

Finally, Table 3 presents data on the allocation of service slots to each of New York City's 59 community districts, focusing on how slot allocations would have differed had the prior allocation formula been used to make slot awards in each neighborhood. This analysis reflects the difference between the slots awarded using the full revised resource allocation formula and what awards would have been had an allocation formula similar to the prior methodology been used. This analysis uses the child safety scale within the new allocation formula as a proxy for this older model, comparing actual slot allocations to what they would have been had a safety-scale only model been used.

Table 3. Impact of New Preventive Service Allocation Models across New York City Community Districts

Name	CD	Slots Awarded	Change from Old Model	Percent Change	Name	CD	Slots Awarded	Change from Old Model	Percent Change
Bronx		2905	303	11.6%	Manhattan		1916	-88	-4.4%
Mott Haven	X 1	316	34	12.1%	Battery Park	M 1	13	-9	-40.9%
Hunts Point	X 2	168	16	10.5%	G'wich Village	M 2	29	-37	-56.1%
Morrisania	X 3	232	23	11.0%	Lower E. Side	M 3	273	21	8.3%
Concourse	X 4	428	19	4.6%	Chelsea	M 4	51	-38	-42.7%
Univ. Heights	X 5	436	104	31.3%	Midtown	M 5	14	-6	-30.0%
E. Tremont	X 6	230	55	31.4%	Murray Hill	M 6	24	-17	-41.5%
Fordham	X 7	276	-12	-4.2%	Upper W. Side	M 7	158	-44	-21.8%
Riverdale	X 8	70	4	6.1%	Upper E. Side	M 8	25	-19	-43.2%
Soundview	X 9	370	98	36.0%	Manhattanville	M 9	263	-32	-10.8%
Throgs Neck	X 10	78	-33	-29.7%	Central Harlem	M 10	332	38	12.9%
Pelham Pkwy.	X 11	100	-15	-13.0%	E. Harlem	M 11	407	33	8.8%
Williamsbridge	X 12	201	8	4.1%	Washington Hts.	M 12	327	21	6.9%
Brooklyn		4145	343	9.0%	Queens		1636	-271	-14.2%
Williamsburg	K 1	270	94	53.4%	Astoria	Q 1	151	-64	-29.8%
Fort Greene	K 2	167	-25	-13.0%	Sunnyside	Q 2	44	13	41.9%
Bedford Stuy.	K 3	482	62	14.8%	Jackson Hts.	Q 3	94	-11	-10.5%
Buswick	K 4	342	54	18.8%	Elmhurst	Q 4	86	33	62.3%
E. New York	K 5	535	102	23.6%	Ridgewood	Q 5	104	-18	-14.8%
Park Slope	K 6	267	-56	-17.3%	Forest Hills	Q 6	33	-2	-5.7%
Sunset Park	K 7	209	22	11.8%	Flushing	Q 7	67	-29	-30.2%
N. Crown Hts.	K 8	267	-15	-5.3%	Fresh Meadows	Q 8	67	13	24.1%
S. Crown Hts.	K 9	211	25	13.4%	Woodhaven	Q 9	103	-48	-31.8%
Bay Ridge	K 10	40	-42	-51.2%	Howard Beach	Q 10	121	-33	-21.4%
Bensonhurst	K 11	72	12	20.0%	Bayside	Q 11	32	-11	-25.6%
Borough Park	K 12	114	25	28.1%	Jamaica	Q 12	409	-28	-6.4%
Coney Island	K 13	185	-2	-1.1%	Queens Village	Q 13	124	-55	-30.7%
Flatbush	K 14	201	12	6.3%	Rockaways	Q 14	201	-28	-12.2%
Sheepshead	K 15	82	24	41.4%					
Brownsville	K 16	355	39	12.3%	Staten Island		293	-212	-42.0%
E. Flatbush	K 17	222	36	19.4%	Willowbrook	S 1	196	-110	-35.9%
Canarsie	K 18	124	-24	-16.2%	South Beach	S 2	57	-69	-54.8%
					Tottenville	S 3	40	-33	-45.2%

The impacts of the newer, fuller model were quite substantial in several communities. Three community districts saw a change of more than 100 service slots as a result of the use of the full model, and one-third of communities experienced a switch of 30 percent or more in their allocated slots. The direction of change due to these models also offered some

interesting patterns. Two boroughs, the Bronx and Brooklyn, gained in slot allocations under this full model, while the other three boroughs saw declines. In addition, there are some patterns within the boroughs that are worthy of note. For example, while Manhattan did receive 4.4 percent fewer slots under the full model, the four community districts with the greatest need in this borough saw increases (Lower East Side, Central Harlem, East Harlem and Washington Heights). Other needy communities receiving increases under the full model include much of the South Bronx (community districts 1 through 6 and 9) and Central Brooklyn (community districts 3, 4, 5, 9, 14, 16 and 17).

Discussion

The revised approach to allocating preventive services in New York City appears to have had substantial impacts on the system, on individual providers and, hopefully, on the children and families served by these programs. The combination of putting in place model budgets and revising how resources are distributed among communities in New York City should equalize access to quality service, relative to what distributions would have been under previous allocation and budgeting methods used in this jurisdiction.

However, this analysis has significant limitations which must be acknowledged. One set of limitations surround the lack of independent validation for these measures, other than the review and consensus methodologies used to confirm indicators used and weights assigned to scales. Greater validity could be established by assessing correlations and predictive value of these and a variety of other measures against relevant, desired outcomes for children and families served by these systems, such as extent and nature of violence or neglect in families, incidence of substance abuse or emotional disturbance or inadequate housing. However, many of these desired outcomes or needs are extremely difficult to

measure, which would introduce some degree of error into any external validation calculations.

Much of the challenge in measuring outcomes in child and family services also arises from the different beliefs held by actors in these issue areas as to what constitutes positive outcomes for these services. One reflection of these differences was the substantial debate among research, policy and advocacy actors as to the role preventive or family-preservation services should play in supporting vulnerable children and their families—from preventing foster care placement, to preventing child abuse and neglect, to improving the broadly defined “well-being” of families and communities. Each of these sets of objectives imply different sets of outcome measures for children and families affected by these programs, ranging from incidence of foster care placement or child abuse/neglect, to difficult to define child and family health and well-being measures. This diversity in desired outcomes in child and family services introduces significant challenges to any effort to conduct more formal analysis of equity—unless explicit consensus can be reached among those most affected by these programs, any standard used to analyze equity in these settings will be open to challenge and further debate.

The consensus-based decision making processes used in undertaking this work sought to mitigate some of these limitations. One exemplar of the role consensus processes played here was the decision to use reports developed by a leading advocacy organization in selecting community need indicators. Another example was the use of consensus decision making processes in determining scale weights for resource allocations. Finally, model budgets sought to establish parity across organizations in funding levels. Each of these approaches appears methodologically sound, and offered the additional benefit of increasing

buy-in from other system actors to ensure these reforms would be put in place. On the whole, the outlook for how these reforms should impact on these services appears to be quite positive.

The strategies to incorporate buy-in were particularly notable in this case, and may offer important benefit to other service systems engaged in resource allocation exercises. In particular, using senior management to validate allocation weights and variables, using reliable data collected and reported by a widely recognized advocacy organization, and reviewing methods publicly and repeatedly with contract agencies reduced resistance to funding reallocations. In addition, qualitative validation of the variables and weights used in this formula provide methodological support in a situation where the metric of interest, preventing foster care placement, is inherently unmeasurable.

This case may offer generalizable lessons for public agency managers concerned with issues of resource distribution. One issue made clear through this work is the need for senior managers and policy advocates to consider issues of equity in the distribution of program resources. Even relatively simple analytic methodologies can be used to undertake periodic reviews of resource distributions. These reviews should include collection and reporting of available data on financial expenditures, clients served, and per-client budget costs across any relevant geographical or organizational service units within the district. Wherever feasible, districts may also wish to consider collecting, aggregating and reporting available population, demographic, service need or administrative data across these same service units. These measures can provide a useful comparison against current resource allocations, identifying locations or service units where adjustments of resource allocations may be desirable. Even if

major adjustments in resource allocations are not contemplated, the ready availability of such information could ensure that equity issues are considered as part of routine decision making.

A second important element in this work is its reliance on clear methodologies that seek to remove both the reality and appearance of bias from the resource allocation decision, and increase validity of all measures used. While the approaches used in this setting were moderately complex, they were appropriate to the scope of services in question. Moreover, once the approaches were explained to providers and other system actors, they were generally understood and perceived as significant improvements over how decisions were made in the past. As presented in Table 3, the specification of the models used in this exercise was important, and had substantial impacts on how many slots were assigned in each neighborhood.

A third valuable set of lessons from this work is the need to balance analytic results with policy and programmatic demands of the services in question. One exemplar of this point in the New York City case was the decision to limit resource reductions in any community district to 25 percent, even if the resource allocation methodology suggested that greater reductions were merited. While these limits did mean that some communities would continue to receive more resources than they might otherwise be entitled to, they also mitigate impacts on individual long established programs that might otherwise have suffered crippling resource reductions. Such cuts could have undone the efforts agencies had made over many years to establish and maintain their work with families and children, undermining some of ACS' strongest programs. This decision also had unmistakable political benefits, ensuring communities and their leaders that impacts on programs would have some limits.

Other lessons may be less generalizable, but still worthy of note. Perhaps the most important of these is that undertaking these reforms during a period of substantial expansion of available resources clearly made this work more readily acceptable to all concerned. However, while additional resources certainly mitigate negative perceptions of these changes in affected communities, the case could be made that systematic resource allocations are most necessary during times of steady or declining resources when each available dollar must be used to maximum benefit [Congressional Budget Office, 1980; Gramlich, 1976]. Analytic approaches that seek to balance resources more fairly across need groups can best ensure the maximum marginal return on available resources, maximizing the total benefit of these resources.

Finally, it should be noted that the specific methodologies described in this paper are not the only ones available. In many cases, much simpler approaches may be used quite effectively, especially in situations where total available resources are smaller, or where the geographic, demographic and programmatic service distribution is less diverse than was the case in New York City. On the other hand, other services or service systems may be much more complex, and will no doubt require more intricate and/or more precise analytic approaches which can increase confidence in the validity as compared to those outlined here. The central item of concern should be to develop data sources that are valid, reliable and consistent, to use methodologies that are clear, unbiased and appropriate to the analytic task at hand, and to seek to communicate the overall approach and its results in a manner understood by all relevant actors.

Chapter 5. Matching Needs and Services: an Outcome-Based Needs Assessment Tool for Community-Based Service Systems

Introduction

Child and family service systems across the United States are increasingly focusing on the community context of their services [Robertson & Wier 1998]. These include national reform models such as Family-to-Family [Annie E. Casey 1999] and Community Partnerships for Child Protection [Edna McConnell Clark Foundation, no date], as well as community-based services reforms in Los Angeles and New York City, the nation's two largest districts. While these reforms employ different strategies and focus on different aspects of case practice, they all focus on enhancing the important roles that community residents and community-based service providers play in addressing the needs of vulnerable children and their families.

Community-based service reforms require new sources of information [Connell et al. 1995]. Such information is vital to ensure that responsibilities devolved to the community level are met and that no child or family "slips through the cracks" in the system. Data also provide system leaders with the tools necessary to set directions and ensure the fair distribution of resources to all parts of these systems. While the child and family service research literature is increasingly focusing on the power of administrative data to support these needs, these data are only a starting point for understanding the complex and dynamic needs of the children and families who typically come to the attention of child welfare authorities [Wulczyn et al. 2000; Wulczyn et al. 1997]. Supplementing administrative data with qualitative information provides a more "three-dimensional" portrait of the challenges

facing families and of the service strategies that might better meet these challenges [Usher et al. 1995; Altshuler & Gleeson 1999].

Qualitative data can be collected using case record reviews, surveys, focus groups, or structured assessment tools derived from the social and behavioral sciences. Collecting valid qualitative data on the multidimensional and changing issues facing at-risk children and their families is difficult and costly, requiring careful attention to methodology. This can reduce the scope of what can be reliably examined. Even when high-quality qualitative information is collected, it can be difficult to communicate it to those who most need it—line staff and clients. Finally, these approaches rarely reflect the voice and perspectives of line staff, managers, parents, children, and others who have substantial day-to-day experience in how child welfare services work and the needs of children and families served by these systems.

The Matching Needs and Services (MNS) approach builds upon traditional qualitative research techniques, supporting the collection of high-quality information on the service needs of vulnerable children and their families. It explicitly includes the voice and perspectives of those who work in and are affected by these systems on a day-to-day basis. Developed by the Dartington Social Research Unit in England, MNS has been used in many local districts in the United Kingdom, Norway, Italy, Spain, and the United States [Dartington 1999]. MNS uses a relatively simple case review methodology in which small teams of participants from social service systems, along with individuals served by these systems, identify the primary service needs of a defined target population and formulate recommendations for best meeting these identified service needs.

This article presents an overview of the MNS methodology, as well as a detailed case example from the implementation of this approach by the Administration for Children's

Services (ACS) in New York City, which is using the MNS methodology as a central component of its newly implemented Neighborhood Based Services strategy [Scoppetta 1996]. Also presented are results from ACS' pilot review using the MNS methodology, as well as an examination of the issues involved in moving toward implementing strategies emerging from this analysis. Finally, recommendations for how this approach may be used in a variety of social, health and education service systems are offered.

Methodology

As noted above, MNS is a planning method that seeks to clarify the patterns of need among children and families served by a provider agency, using statistically valid sample designs and rigorous methodology. It is explicitly assumed that the MNS review will inform the structure and operation of the services delivered to clients and that incorporating the voice, experience and perspective of staff and clients directly involved in these systems will yield more effective analysis and more useful data to support service enhancements.

The eight elements of the MNS process are described below, with estimates of the time required to complete each step in a given review "cycle." The following paragraphs detail the stages of work involved in completing one MNS review cycle. These descriptions include estimates of the amount of time required to complete each stage in the New York City case. Total time to complete all stages in an MNS analysis will include periods where work is taking place on more than one stage at a time, as well as gaps in time between the end of one stage and the beginning of another. Dartington staff believed this process could be completed in as little as six weeks, but it required more than six months total elapsed time in the New York City case [Dartington 1999].

1. Study Design and Preparation (4-6 weeks): The MNS process starts with a commitment from executive staff to dedicate the resources, time, and organizational focus needed by this project. This process requires a project manager and group of reviewers who will dedicate significant time to this analysis. The reviewers are eight to twelve professionals with a mix of experience in the service system, including line caseworkers and supervisors, program development staff, researchers, senior managers, and colleagues from cooperating service systems. Reviewers will be required to make a four- to six-day time commitment to complete their work in this process, although this can be spread over several weeks if necessary.

2. Sampling Frame and Case Record Collection (3-4 weeks): The MNS process starts with identifying and gathering a representative sample of 100 to 500 case files from the service area being examined. Cases can be drawn from almost any portion of the service system, including protective services, preventive services, or foster care placement cases, or from a combination of these elements. The MNS review tools have been developed explicitly within the context of child and family services, and all information needed should be available within standard case records used in most service agencies. Obviously, all legal, regulatory and case practice issues surrounding confidentiality of case records must be observed. In practice, however, the most substantial challenge in this stage lies in actual collection and, if necessary, photocopying of the case records.

The key feature of this sample selection is that it is longitudinal, not cross-sectional [Dartington 1999]. The recommended sampling design is to select cases sequentially as they enter the service system from a given starting date. This ensures the most representative sample possible, avoiding biases that can result from cross-sectional samples of "in care"

populations that tend to over-weight cases that receive service for longer periods. Sequential sampling also allows more accurate measurement of the number of clients expected to enter a need group over a given period of time.

3. Review Team Training; Record Review; Audit Forms (1-2 days): After the group is provided a background briefing on the MNS process and how the agency expects to use the information gathered by this review, training is conducted during each stage of the review cycle, typically by having the group work together to complete one or two example cases [Dartington website: <http://www.dartington-i.org>]. It is especially important to familiarize all reviewers with the layout of case records and where they can obtain information needed for different sections of the review form.

Case record reviews focus on six domains of child and family life: living situation; family and social relationships; physical and psychological health; education and employment; social and antisocial behavior; and other issues, including financial status. A two-page review form is designed to protect client confidentiality and can be modified to reflect the circumstances of a given analysis in each system. Reviewers are directed to keep information brief, to the point, and in laymen's terms. This format proved highly effective in collapsing the often-daunting amount of data in a typical service record into a highly compacted space that was useful for later stages of the MNS analysis.

The MNS review tool examines the six domains from three perspectives, each reflected in an individual column of the form. Reviewers first focus on the child and family situation on the day they began service, across the six domains. Second, reviewers must identify, in straightforward language, what the *needs* are for the child and family in each of the six domains at point of entering services. This is a critical step, as it forces the reviewer to

think in terms of needs, as opposed to services. This shift in thinking—away from a focus on services and onto the underlying family and child needs—is one of the biggest hurdles for reviewers to overcome in the MNS process. The reviewer must focus on what concrete action needs to occur, and how this action would be observed. The challenge here is to adequately reflect the multifaceted nature of challenges facing at-risk families, in language that is clear, jargon-free, and without prematurely moving to identify the services that might be traditionally used to meet these needs.

The third column of the form asks reviewers to establish desired outcomes for the child and family in each domain. This information will be of great importance during the service-design phase, as new services will be based on the desired outcomes for all children identified as part of each need group. It is imperative that the outcomes capture the complexities of the child and families' problems. Lastly, reviewers collect data on the actual service experiences of the child and family and enter the date on the reverse side of the form.

Using a team of eight to 12 reviewers, the process of completing 100 review forms takes approximately one to one and one-half days, with each record requiring approximately 10 to 15 minutes to be reviewed. At the end of this work, information from tens of thousands of pages of case records has been summarized in a consistent manner on a single two-page form for each child included in the sample. These forms provide the source data for the remainder of the MNS review exercise.

4. Sort Forms into Need Groups (1 day): Once the forms have been completed, the team engages in the sorting session, which is in many respects the centerpiece of the MNS methodology. Each member of the review team, again drawing on his or her own unique training and experience, makes a determination as to the primary need for the children and

families in each service case. Based on that determination, the review forms are sorted into need groups reflecting these primary needs. Some time is allowed for debate and discussion, but the individual who completed the form makes the final determination. After all cases are sorted, the results are reviewed to allow for the possibility of reshuffling of particular cases. The piles created by this shuffling exercise represent the need groups identified by the MNS process. Typically, eight to 12 need groups are identified.

5. Define Need Groups; Establish Desired/Expected Outcomes (1 day): Once the shuffling process produces the initial sorting of cases into need groups, the review team works to create clear definitions for each identified need group and establish desired outcomes for any child and family included in each need group. Again, this is an opportunity to accurately capture the complex, multifaceted nature of service needs, allowing reviewers to lay the groundwork for designing services.

To define and establish outcomes for each need group, reviewers focus on the multiple issues impacting particular groups of families within particular communities. It has long been recognized that the challenges facing at-risk children and their families are often multiple and can change over time (Halfon et al. 1994; Koegel, et al. 1995]. Although each child and family situation is in many respects unique, the MNS method seeks to use case-level data and the expertise of the review team to identify common patterns of need that underlie these complex and dynamic issues. This allows information from individual cases to inform analysis, supporting system, and community-level reforms at a more fundamental level. This conversation will often lead the group to further refine and revise the initial need group sorting.

6. *Develop Service Design Based on Outcomes (1 day)*: The last objective of the review team is to formulate service strategies that can meet the needs of children and families within each need group. The group must be realistic in designing implementable service strategies (“stay on the page”), but not be constrained by thinking only of current service approaches (“get out of the box”). The group must focus at all times on the actionable needs presented by the child and her family. At this stage, service strategies are only described at a conceptual level, with less focus on operational program details. Instead, the group tries to reach consensus on service strategies that it believes can most effectively and efficiently address the primary service needs facing families in each need group.

7. *Design and Implement Services at the Community Level (6-8 weeks)*: Once the review team completes its work, MNS becomes similar to a traditional planning process. The MNS authors recommend that this be undertaken by dedicated service planning staff [Dartington 1999]. Planners should, however, hold routine briefings with the review team as the work of program design and implementation unfolds.

Deciding which service options to pursue is a key question at this stage. The choice of service priorities requires significant judgment on the part of planners and senior managers, and is driven by the individual context of the service agency. Several criteria are available to focus this decision: the largest group; the most widely perceived need among agency leaders and community actors; areas with resources available to support new program designs; service strategies most ready to implement in the service organization; or those groups which have historically received less focus and attention from the service agency [Dartington 1999].

8. *Evaluate Service Effectiveness vs. Desired Outcomes (4-6 weeks)*: A final stage in the MNS process is to evaluate the services that are ultimately implemented. One key

advantage in MNS is that the relatively clear exposition of need group definitions and desired outcomes can greatly facilitate well targeted data collection and less ambiguous interpretation of evaluation data.

Analytic Design

In 1998, New York City's Administration for Children's Services (ACS) identified MNS as a potentially useful tool in its efforts to design and implement neighborhood-based child and family services. ACS chose to pilot MNS using five separate review "cycles," examining a total of 333 children. Each cycle reviewed between 83 and 127 records, using two case samples from the South Bronx and one from Staten Island. Two review cycles were staffed by ACS management and planning staff, one cycle included ACS casework staff, and two cycles provided client validation—one with parents, foster parents, and parent advocates, and a second with adolescent foster children. This pilot was designed to support both aggregation of findings across all five cycles and to offer comparisons across geographic areas and review teams.

The client validation cycles required two days to complete rather than five, since parents and foster children started with already completed forms from previous cycles and focused on sorting cases and identifying service strategies for each group. The parent review cycle included foster parents and birth parents of children who had experienced foster care placement, while the foster child reviews were conducted by adolescent foster children aged 14 and above. Client validation cycles sought to provide those most directly impacted by child and family services, children and their parents, the opportunity to review the summary data on the sample cases and offer their own case sorting, need group definitions, and recommended service strategies. It was hoped that these responses would offer a distinct

voice either validating or contrasting the findings from the reviews conducted by ACS staff, particularly with respect to design and operation of services to meet identified needs.

RESULTS

The five review teams identified between eight and 11 different need groups. Table 1 presents a composite of all eleven identified needs groups, need definitions, and the number of cases in each group aggregated across the five review cycles. Substance Abuse Treatment, Permanency through Adoption/Custody, and Parenting Skills were the three largest identified needs, representing 63 percent of all cases. However, the five smallest need groups—Temporary Care/Immediate Reunification, Practical Help with Special Needs, Domestic Violence, Independent Living, and High Risk/Multiple Need reflected 13 percent of cases sampled.

Table 1. Composite need groups and definitions across five MNS Cycles.

Need Group	Need Group Description	Number of Cases	Percent
1. Housing	Family needs safe, affordable housing, and comprehensive housing advocacy.	37	7%
2. Parenting Skills	Caregivers must meet the basic needs of their children and learn appropriate methods of discipline. Caregivers also need to understand normal child/adolescent development and how to engage their child in age-appropriate activities.	94	19%
3. Cope with Trauma and Loss/ Stable Environment	Child needs a stable environment where he can address issues associated with severe trauma and loss. Comprehensive substance abuse treatment, and physical and mental health services are needed.	23	5%
4. Emotional Well-Being	Children and parents need mental health services to keep the family united. Parents of children with mental illnesses need training and respite care.	61	12%
5. Temporary Care/ Immediate Reunification	Children need temporary care as a result of caregiver's absence due to incarceration or hospitalization. Family should use preventive services to avoid inappropriate foster care placement.	6	1%
6. Practical Help with Special Needs	Child and caregiver need education and skill building to manage diagnosed physical and/or behavioral conditions.	14	3%
7. Domestic Violence	Caregiver must provide a safe and violence-free environment for her children and learn how to become independent and self-confident. The caregiver also needs support services to address substance abuse and legal problems.	18	4%
8. Substance Abuse Treatment	Parents and children in this group must cease abusing drugs and establish a drug-free home. Parents need to learn appropriate ways of caring for children. Older children must understand the effect drug addiction has on their parent's ability to parent. Some clients may need to detoxify or receive HIV/medical care.	114	23%
9. Permanency Through Adoption/ Custody	Children need a permanent, safe, stable home through either adoption or custody. Reunification with the birth father/mother is not advisable or impossible. Children need appropriate mental health services to assist in adjusting to their new living situation.	106	21%
10. Permanency Through Independent Living	Children need alternate living arrangements due to an inability to return to natural caregiver. Children must complete their education and develop skills in personal and health care, housing, employment, vocational training, and financial management.	7	1%
11. High Risk/Multiple Need	The child must be removed from harm's way while addressing multiple issues underlying the unsafe situation. This need group has multiple severe needs that weigh equally in preventing reunification, rather than a single primary definable need.	21	4%
	Total	501*	

*Note: These 501 observations reflect 333 individual cases.

The five review cycles revealed many differences and similarities, as presented in table 2, below. Three need groups were identified in every cycle—Housing, Parenting Skills, and Substance Abuse Treatment. Two other need categories were identified in a significant share of cases —Permanency through Adoption (21 percent of cases overall) and Emotional Well-Being (12 percent)—but were not identified by participants in one or more cycles. The remaining need groups included between 1% and 5% of the total sample and were identified by between one and three review teams. Only one need group was identified in only one cycle—High Risk/Multiple Needs in 16 percent of the Cycle 1 cases reviewed.

Table 2. Percentage of Cases Assigned to Need Groups by Review Cycle, ACS Matching Needs and Services Analysis.

Review Cycle:		1	2	3	4	5
Community:		South Bronx 1	South Bronx 2	South Bronx 1	South Bronx 1	Staten Island
Sample Size:	501	101*	127	83*	83*	100
Review Team:	Total	ACS Policy	ACS Line Staff	Parents	Foster Children	ACS Policy
Need Group:						
1. Housing	7%	4%	1%	12%	14%	24%
2. Parenting Skills	19%	13%	18%	24%	29%	2%
3. Stable Environment/Cope with Trauma and Loss	5%	8%	--	14%	--	--
4. Emotional Well Being	12%	13%	18%	--	18%	4%
5. Temporary Care/Immediate Reunification	1%	1%	3%	--	1%	--
6. Practical Help with Special Needs	3%	7%	--	6%	--	1%
7. Address Domestic Violence	4%	12%	--	--	--	6%
8. Substance Abuse	23%	27%	37%	44%	8%	11%
9. Permanency Through Adoption/Custody	21%	--	21%	--	30%	47%
10. Permanency Through Independent Living	1%	--	2%	--	--	5%
11. High Risk/Multiple Need	4%	16%	--	--	--	--

* Note: The same cases were used in Cycles 1, 3 and 4.

However, Table 2 also makes clear that there were significant differences in need group assignments across these five review cycles, and comparing results across five review cycles and three samples reveals few clear patterns. One comparison worthy of note is between Cycles 1 and 2, which both reviewed cases from the South Bronx. Although both panels identified Substance Abuse Treatment as the largest need group, ACS line casework staff in Cycle 2 assigned a higher percentage to this group (37 versus 27 percent). In addition, line staff assigned 23 percent of cases to the Permanency through Adoption and Independent Living need groups, while policy and planning staff in Cycle 1 assigned no cases to these groups. Conversely, Cycle 1 assigned 12 percent of cases to the Domestic Violence and 16 percent to the High-Risk need groups, where none were assigned in Cycle 2.

Another set of patterns of interest is geographic. Policy staff reviewing Staten Island cases in Cycle 5 appeared to find more concrete needs among cases reviewed, assigning almost half of cases to the Adoption need group and almost one quarter to Housing. At the same time, this review identified only 7% of cases falling into need groups associated with clinical or therapeutic needs (Parenting Skills, Trauma and Loss, Emotional Well-Being, and Special Needs). In comparison, Cycles 1 and 2 assigned fewer cases to Adoption and Housing groups, but 38 percent of cases to the therapeutic categories.

Finally, the client validation analyses in Cycles 3 and 4 used cases from Cycle 1. Fifty-six percent of these cases received matching need group assignments between two or three of these teams. While the parents in Cycle 3 assigned 44 percent of cases to Substance Abuse Treatment, the foster children only identified this need for 8% of cases. Both groups

assigned many more cases to the Parenting Skills and Housing need groups than were identified by ACS staff reviewing South Bronx cases in Cycle 1.

DISCUSSION

The analysis presented here has substantial limitations, which must be considered carefully when interpreting the results of this pilot project. The clearest limitation of this process is revealed in the substantial differences in need group assignments across the five separate review cycles, which would appear to signal challenges in consistency and perhaps reliability of this analysis. Though this pilot study sought to test the fullest possible range of results likely to emerge from this methodology by intentionally using cases from a variety of community districts and included a wide range of participants, the disparity in results across these cycles remains notable.

Most striking may be the differences in results from South Bronx cases reviewed by ACS Policy and Line Staff in Cycles 1 and 2, respectively. For example, while Policy Staff in Cycle 1 found approximately one in 12 cases fell within the Stable Environment and Special Needs groups, one in eight in the Domestic Violence group and one in six in High Risk/Multiple Need group, Line Staff in Cycle 2 failed to assign any cases to such groups. At the same time, Line Staff found one in four cases to fall in the adoption need group versus none in Cycle 1, and also assigned notably higher shares of cases to the Substance Abuse, Emotional Well Being and Parenting Skills groups than did the Policy team.

However, it is also worth noting that, with the exception of the High Risk/Multiple Need group identified in Cycle 1, every need group was identified by two or more review teams during the pilot. This appears to demonstrate some degree of consistency in the MNS

method's ability to identify patterns of need even if the distribution of cases assigned to need groups will vary.

In addition, the issue of reliability and consistency of results may have to be balanced against the benefits this review tool offers in permitting the voices and participation of a wide range of actors in the planning process. In a sense, including these participants in this process may increase the real or perceived "validity" of these findings. In the language of qualitative research methodology this might be considered face or construct validity, arising from the reliance on consensus methods used here. In addition, this method may offer "political" validity, in terms of organizational buy-in and political support for the design and development of new service strategies associated with such consensus measures.

In fact, future researchers may be able to draw lessons from other consensus research methods in trying to improve consistency and reliability of results from this method, including increasing training time for review team members; developing more structured prompts and increasing training to allow process facilitators to provide more explicit guidance to review teams during the need group assignment process; providing more explicit feedback to the group in the form of measures of agreement or disagreement on each case reviewed; and possibly to requiring somewhat larger sample sizes in these reviews. Even greater consistency could probably be achieved if review teams were constituted more homogeneously of clinical or other "experts", though this could significantly compromise the key benefit of this process—its broad inclusion of diverse voices into the planning process.

Even during the pilot stages described in this analysis, the Matching Needs and Services process did have substantial impact within the New York City Child Welfare services system. When the five-cycle analysis was completed, results were presented to

Matching Needs and Services

senior managers in the ACS system, and continuing efforts are now focusing in two areas. First, ACS has decided to focus on the Housing need group, taking several steps towards enhancing programs and services to meet the needs of families with a primary need for adequate, stable housing. These steps include creating a dedicated housing development unit within the agency, working with service providers to enhance services to families with unmet housing needs, and initiating partnerships to develop new housing resources specifically targeted to the needs of families within the child welfare system.

ACS is also expanding use of MNS at the community level. As part of its movement towards community-based services, ACS is requiring that providers create neighborhood service plans and has established MNS as the preferred method for this work. Currently, all foster care, preventive and homemaking service providers with ACS contracts in the Bronx are starting the MNS process in conjunction with trained ACS technical assistance teams. ACS expects to complete multiple MNS review cycles in virtually all neighborhoods of New York City over the next year.

As these efforts unfold, ACS expects other community-based systems, including the police, Board of Education, and hospitals to join this process. The results of these analyses are expected to generate significant opportunities to integrate existing services at the community level and to identify other needed service programs. Special ACS units dedicated to implementing MNS service designs are being assembled to help ensure a smooth transition in the introduction of new services. ACS anticipates the impact of MNS on service delivery to the children and families in New York's child welfare system to grow over time and to be a fundamental element in the ongoing creation of neighborhood-based service delivery systems.

Despite the many positive aspects revealed by this project, some limitations are clear. One issue is the resource demands of this process. The reviews at ACS were significantly facilitated through a grant of \$25,000 provided by the Annie E. Casey Foundation. This grant allowed ACS to contract directly with the Dartington Social Research Unit, allowing facilitators from England to travel to New York to train ACS staff as facilitators and to guide completion of the first review cycle. These resources also allowed a team of ACS personnel to visit local authorities in England that had used the MNS process in the past. While the Dartington staff made significant contributions to the successful completion of the MNS pilot project in New York City, available published materials could allow many local districts to succeed in implementing MNS reviews either on their own or with relatively little training, should outside resources not be available.

Identifying staffing resources is another area of potential challenge in implementing MNS reviews. Although many planning processes are resource intensive, MNS requires the participation of eight to 12 staff over a four- to six-day period, plus several weeks of additional work from a core planning group. As such, completing a single MNS review will typically require between 60 and 150 person-days of effort. Time demands increase if multiple cycles are undertaken, though some efficiencies are possible. Since most of this resource commitment arises from the contribution of the staff who participate in the case review portion of the process, this burden can be spread over a larger number of participants than may be common in many traditional strategic planning exercises [Mintzberg 1994].

Another concern with this process surrounds what happens after the completion of the review cycle. Staff from the Dartington Social Research Group have made it clear that successful implementation of new programs arising from MNS has been rare [Dartington

1999]. Although the problem of implementation is always challenging in any social service context and cannot be specifically ascribed to the MNS process, the relative rarity of successful implementation of new programs and services under this process is clearly an important issue.

Perhaps the most significant challenge facing local districts seeking to implement findings from reviews such as MNS is that the needs identified among clients can be expected to be complex, multiple, and dynamic. These client needs will frequently give rise to service recommendations that require new resources or flexible use of available resources.

Implementing such services will often demand support and/or collaboration from multiple service systems. However, the MNS methodology is analytically rigorous, can be clearly explained to actors in other systems, and produces results that can be readily understood by wide range of actors across service systems. Thus, while this process of itself will not solve complex issues involved in inter-organizational collaboration, the MNS process can be expected to provide clear statements of client needs and recommended service strategies which will facilitate communications with other system actors.

The ACS experience offers several suggestions for ensuring successful implementation of MNS reviews in community-based service settings:

- 1) Senior managers in the reviewing jurisdiction must be fully aware of this process. Their commitment to seeing this review through full implementation must be explicit and widely recognized by others in the organization.
- 2) Senior managers and planners must acknowledge from the beginning that implementation is a serious challenge in this process. Staff participating in this process must explicitly identify strategies to ensure effective implementation.

- 3) The supervising agency must remain flexible and responsive in addressing concerns of participating agencies regarding sample size, confidentiality of records, and completion schedules.
- 4) Building in child, parent, and line staff participation broadens the range of perspectives included in the review process and gives voice to those who have the most impact and are most impacted by these services.
- 5) Careful attention should be paid to disseminating findings from these reviews. In particular, reports arising from this work should be written to be accessible to all actors impacted by these systems, including children, families, line staff and advocates.
- 6) Finally, planners and senior managers should be strategic in deciding which service strategies are implemented and in what order these strategies are pursued. In particular, it is probably a good idea to start with approaches that are most readily implementable in the beginning, even if these reflect smaller need groups or groups with less extreme presenting problems.

Despite these important limitations, MNS appears to offer significant potential as a tool policy researchers can use in planning for child and family services. This method could be readily adapted for use in a variety of health, education, and community service programs. In particular, its focus on methodologically consistent collection of data from actual case records and its explicit inclusion of those who work in and receive services from these systems in this formalized planning process appears relatively unique. These strengths can reinforce each other in the MNS process, yielding results that are both rigorous and meaningful to those who must participate in any successful changes in these systems.

Chapter 6. Effects of Community-Level Needs on Foster Care Outcomes

Introduction

While there is general recognition that child and family service evaluation must rely on multiple research methods, to date the most robust evaluations have used event history analysis to model measurable program outcomes in a variety of child and family service settings [Wulczyn, Orlebeke, and Melamid, 2000; Fraser, Pecora, and Popuang, 1992]. These efforts have increased recognition of the importance of high quality evaluation in community service initiatives, and also raised awareness of the many challenges facing evaluators in this area.

Researchers, practitioners and children's services advocates generally acknowledge the role community context may play in all services to vulnerable children and their families [Schorr, 1997]. The benefits of attending to community needs in these services include: less disruption in the child's life; improved service to the child's family, especially by reducing barriers to visitation while the child remains in care; and support for service networks within communities most impacted by child abuse and neglect which can better ensure the safety of reunified children and reduce risk of replacement in foster care [Pecora, Whittaker, Malluccio, Barth, and Plotnick, 1992; Fanshell and Shinn, 1978]. Ultimately, the boundaries between child protective services (including foster care) and community are substantially permeable: more than half of children entering foster care in eleven states studied by Wulczyn, Bruner and Goerge [1999] eventually returned to their families and home communities, while almost one in four discharged children returned to care.

The impact of community-level needs on outcomes for children in foster care is explored by building upon proportional hazards event history models used to evaluate programs operated by the New York City Administration for Children's Services (ACS) [Wulczyn, Orlebeke and Melamid, 2000]. These models were developed as part of this agency's community-based reform initiative, and were designed to measure performance of 41 non-profit foster care agencies who provide service to approximately 30,000 children at any point in time under contract with ACS.

These evaluations sought to identify agencies where children experienced outcomes from foster care that were significantly above or below "average", with the intention of providing supports for agency's experiencing poorer outcomes and/or to shift placements towards better performing providers. The analysis presented here augments these evaluation models, by assigning a community need score from each of New York's 59 community districts to each child whose record indicates their home address in the evaluation database. Incorporating community need into these models may offer insight into both policy-level and methodological issues that arise in the implementation and evaluation of community-based foster care services. At the policy level, this analysis will seek to assess whether the impact of community context on the outcomes children experience in foster care is measurable, and whether children entering care from more challenged communities are likely to experience poorer outcomes from foster care services. Methodologically, this analysis explores the use of these community need scores as a proxy for child and family level risk adjustment to the original evaluation model.

Despite the wide recognition of the importance of community context in these services, little attention has been paid to the impact of community-level need characteristics

on foster care outcomes: evaluating how the level of need in different communities may affect outcomes of children from those communities who experience foster care placement. This paper uses data from the nation's largest child welfare system to explore methodological, programmatic and policy issues in measuring community need and in incorporating such measures into evaluations of outcomes in foster care services.

Methodology

Event History Outcomes Models: As noted above, this analysis builds upon foster care outcomes evaluation models developed by ACS in conjunction with the Chapin Hall Center for Children at the University of Illinois [Wulczyn, Orlebeke, and Melamid, 2000]. These Outcomes models rely on proportional hazards survival analysis statistical techniques, which are a standard approach for measuring time until an event occurs, such as reunification from foster care, re-entry into care or completion of adoption activities. Such models hold significant advantages over conventional linear regression models, when some members of the sample under study have not experienced the event of interest by the time data are compiled [Fraser, Pecora, and Popuang, 1992]. Proportional hazard models seek to calculate the likelihood of a specific event occurring to an individual with a given set of characteristics, and generates relative risk ratios for dependent variables included in the model. Proportional hazard models allow analysts to consider "censored" cases which have not experienced an outcome during the analysis period in the calculation of risk likelihood ratios.

These evaluation models use administrative data from the ACS' Child Care Review Service (CCRS) computer database to estimate length of time for children to reunify after foster care placement, re-enter into care following discharge, or to have a finalized adoption. The models use demographic and child placement variables available in the CCRS system as

independent variables, including child gender, race, age at the beginning of placement, financial eligibility (a proxy for poverty), year of admission, presence of siblings in care, type of placement service (traditional foster care, kinship foster care, group home, institution, etc.), and previous spells in care. A series of dummy variables representing the 41 contract foster care agencies providing service to the child are also entered into the model, generating estimates of the impact of the agency on child outcomes in foster care.³

Five models are estimated in this framework. Two models estimate reunification rates--one for family-based care (traditional foster boarding homes and placements with relatives), the second for congregate care (institutions, group homes, group residences, agency boarding homes, and other specialized care settings). Two other models estimate re-entry rates for family based and congregate care. The final model estimates adoption finalization rates for family-based care. Samples are drawn representing all children first admitted to care from 1995 through 1997 for Reunification, and 1993 through 1995 for Adoption models. The earlier sampling period for Adoption is designed to permit the many legal and casework activities required to be completed in this service pathway. Re-entry samples represent the universe of children discharged from their first spell in foster care from 1996 through 1998.

Calculating Community Need Scores: In the analysis presented here the basic models are augmented, adding a community needs score reflecting the level of risk for each child included in this analysis from a given community. Community need estimates used in this analysis were adapted from community allocation scores calculated to support financial allocations for preventive services across New York City's 59 community districts [Melamid,

³ Under New York city's foster care system approximately 80% of children in care receive service from nonprofit contract foster care providers, with the remaining children receiving service from directly managed public service units. This analysis reflects results from models run using data on contract providers only.

2001]. The development and content of these need scores are presented in Chapter Four of this dissertation. Table 1 presents data on the allocation of service needs across New York's 59 community districts [Melamid, 2001].

Linking Community and Outcomes Data: Community need scores were linked to outcomes data using family address information contained in the CCRS database. Analysis of missing data patterns in the adoption model revealed 67.7% of cases had missing address data. These missing data arose from two factors. First, the long time lines associated with children moving into and through the adoption process requires that the outcome models focus on children admitted into care as much as eight years earlier. Second, and more importantly, children freed for adoption are assigned new case numbers which are different from their family case number. As a result, the adoption model was not able to be included in this analysis of the impacts of community need on child outcomes in foster care.

Table 1. Community Need Shares for 59 New York City Community Districts, from Melamid [2001].

	Community District	CD Need Allocation		Community District	CD Need Allocation
Bronx		25.5%	Manhattan		16.3%
	Mott Haven X1	2.7%		Battery Park M1	0.1%
	Hunts Point X2	1.4%		Greenwich Village M2	0.3%
	Morrisania X3	2.0%		Lower E. Side M3	2.4%
	Concourse X4	3.6%		Chelsea M4	0.5%
	Univ. Heights X5	3.7%		Midtown M5	0.1%
	E. Tremont X6	1.9%		Murray Hill M6	0.3%
	Fordham X7	2.5%		Upper W. Side M7	1.3%
	Riverdale X8	0.8%		Upper E. Side M8	0.5%
	Soundview X9	3.1%		Manhattanville M9	1.9%
	Throgs Neck X10	0.9%		Central Harlem M10	2.6%
	Pelham Pkwy. X11	1.1%		E. Harlem M11	3.0%
	Williamsbridge X12	1.9%		Washington Hts. M12	3.2%
Brooklyn		36.8%	Queens		17.8%
	Williamsburg K1	2.6%		Astoria Q1	1.6%
	Fort Greene K2	1.5%		Sunnyside Q2	0.6%
	Bedford Stuyvesant K3	4.1%		Jackson Hts. Q3	1.1%
	Bushwick K4	2.9%		Elmhurst Q4	1.1%
	E. New York K5	4.6%		Ridgewood Q5	1.2%
	Park Slope K6	1.2%		Forest Hills Q6	0.4%
	Sunset Park K7	1.3%		Flushing Q7	1.0%
	N. Crown Hts. K8	2.3%		Fresh Meadows Q8	0.9%
	S. Crown Hts. K9	2.0%		Woodhaven Q9	1.1%
	Bay Ridge K10	0.6%		Howard Beach Q10	1.3%
	Bensonhurst K11	0.9%		Bayside Q11	0.5%
	Borough Park K12	1.5%		Jamaica Q12	3.7%
	Coney Island K13	1.6%		Queens Village Q13	1.5%
	Flatbush K14	2.2%		Rockaways Q14	1.8%
	Sheepshead K15	1.0%	Staten Island		3.5%
	Brownsville K16	3.0%		Willowbrook S1	2.0%
	E. Flatbush K17	2.2%		South Beach S2	0.8%
	Canarsie K18	1.4%		Tottenville S3	0.7%

Unfortunately, a large share of the cases used in the other four models also had missing address data: 29.1% in the Reunification Family sample, 47.4% of Reunification Congregate, 32.6% of Re-Entry Family, and 36.2% of Re-Entry Congregate. T-tests comparing mean values of independent and dependent variables revealed that patterns of

missing data would introduce bias into this analysis if left unaddressed.⁴ Missing data biases were corrected through propensity weights, estimated by regressing a flag for data being non-missing on a large number of independent variables using logistic regression analysis. These variables included child duration in care, reunification and re-entry outcomes, and demographic and child placement history variables. Initial results were analyzed to refine the fit of the model and to evaluate for outlier cases that could potentially hold inappropriate leverage on estimates derived from the logistic regression.^{5,6}

Weights were calculated from these logistic regression analyses by taking the inverse of the predicted probability of having non-missing variables, for each of the four remaining models to be included in this analysis [Hosmer and Lemeshow, 1989; McCaffrey, 2001]. These weights were entered into the survival analysis models using Stata's probability weighting option [Stata Press, 1997]. White/Huber Sandwich calculations were considered for incorporation in the model, to correct calculations of significance for bias which would have arisen due to the use of grouped variables, in this case community district need scores [Muthen and Masyn, 2001; Stata Press, 1997]. However, these calculations were not incorporated in these analyses, as children in this sample represent the universe of children affected by these services at this time period. As a result, levels and patterns of significance

⁴ For example, the mean reunification rate for children with missing data was 56.8%, versus 52.3% for children whose address data was available, $t=5.80$ $P>t=0.00$, two tailed. Similar results occurred for other Outcome measures of interest, including days to reunification and re-entry, as well as re-entry rates.

⁵ While no outlier cases were excluded from this analysis, it was necessary to exclude children placed with directly managed public programs from the family-based service analyses. This was due to changes in data entry practices which affected the consistency of service agency codings during the period of this analysis.

⁶ Community Needs were entered into the model as a single continuous variable. While the analysis could alternatively have used the seven separate need scales which underlie this single measure, the very significant levels of correlation across these measures would have been homoscedastic, producing inaccurate hazard ratio calculations for these variables. In addition, one of these scales, Child Safety, is comprised of measures of abuse/neglect and foster care placement rates in each community, and would have been significantly identified with the outcome measures of interest in this analysis. Finally, introducing seven separate scales would have reduced the efficiency of these models.

reported here can be considered unbiased relative to experiences within this system, but must be considered inflated if one seeks to generalize outside the system under study here [Burnam, 2001].

RESULTS

Descriptive Statistics: Table 2 presents summary statistics on the children included in the five outcomes models, including reunification and re-entry samples for both family and congregate care and family-based adoption cases. Relatively few of the demographic or placement history variables exhibit striking differences across these five samples—children in congregate care appear to be substantially older than those in family-based care, and were also much less likely to have siblings in care. Children in congregate care were somewhat less likely to be reunified with their families (57 versus 65 percent), and more likely to return to care if they are reunified (15 versus 9 percent). Lastly, child outcomes appear to vary with community needs: children in the most needy communities (quartile 4) appear to have somewhat lower reunification rates than those in less challenged communities, but also have lower reentry rates once reunified. However, children with missing community data tend to have the highest reunification rates, and the lowest re-entry rates of any group.

Table 2. Mean values of dependent and independent variables used in the foster care outcomes analyses.

	<u>Reunification Models</u>		<u>Re-Entry Models</u>		
	Family	Congregate	Family	Congregate	Adoption
Observations	17,344	3,887	13,284	2,184	14,821
Female	49%	54%	49%	51%	49%
Placement Age <1	23%	2%	19%	1%	26%
Placement Age 1	9%	0%	9%	1%	8%
Placement Age 2-4	23%	1%	22%	1%	21%
Placement Age 5-7	18%	1%	20%	1%	20%
Placement Age 8-10	12%	2%	15%	4%	13%
Placement Age 11-13	10%	21%	10%	21%	8%
Placement Age 14-17	5%	73%	4%	72%	4%
Placement Age 18+	0%	0%	0%	0%	0%
Kinship Foster Care	18%		12%		54%
Institutional Care (25+ children)		27%		25%	
Group Residence (13-25 children)		13%		16%	
Group Home (7-12 children)		51%		50%	
Agency Boarding Home (1-6 children)		8%		9%	
Residential Treatment Program		0%		--	
Eligibility-Federal	47%	35%	30%	33%	81%
Eligibility-Emergency	42%	46%	58%	54%	7%
Eligibility-Not Eligible	11%	18%	12%	13%	12%
Eligibility-Other	0%	0%	0%	0%	0%
Eligibility Missing	0%	0%	0%	0%	0%
White	3%	3%	3%	4%	2%
African American	42%	39%	39%	28%	56%
Hispanic	22%	22%	22%	24%	17%
Other Race	3%	3%	3%	2%	1%
Race Unknown	30%	34%	34%	41%	23%
No Siblings Ever in Care	23%	68%	23%	64%	55%
Siblings In Care, Not Simultaneous	3%	9%	3%	8%	2%
Siblings In Care, same time	74%	23%	74%	28%	43%
Child had previous placements	11%	29%	9%	21%	69%
Community Need--Quartile 1:	17%	14%	17%	16%	9%
Community Need--Quartile 2:	18%	12%	15%	18%	7%
Community Need--Quartile 3:	19%	12%	18%	12%	8%
Community Need--Quartile 4:	17%	14%	16%	17%	8%
Community Need--missing:	29%	47%	33%	36%	68%
	Reunification Rate		Reentry Rate		Adopted
Community Need--Quartile 1:	63%	50%	10%	13%	47%
Community Need--Quartile 2:	59%	55%	12%	22%	46%
Community Need--Quartile 3:	65%	50%	11%	21%	44%
Community Need--Quartile 4:	59%	46%	9%	14%	48%
Community Need--missing:	76%	64%	7%	9%	45%
Overall Average	65%	57%	9%	15%	46%
Days to Exit/Censoring	463	227	363	338	1,176

Outcomes Analysis: Table 3 summarizes results from the proportional hazards analysis models for reunification, for both family-based and congregate care models. For each of these models, results are presented first from the “base” model. These results reveal a large number of significant relationships between the control variables and Reunification from Family-Based Care, but somewhat fewer patterns of significance in the Congregate model. Specifically, the Family-based model demonstrates increased likelihood for Reunification for female children, all age categories other than infants, children in traditional rather than kinship foster care settings, those who are not eligible for Federal reimbursement (which serves as a proxy for poverty in the model), those admitted in 1995, those who from the white racial/ethnic group, and those who do not experience transfers while in care. Patterns of significance in the Congregate sample are less striking, but largely follow the same patterns as the Family-care sample. It is worthy of special note though, that the Hazard Ratio for Reunification of children experiencing transfers in Congregate care is 0.48, indicating that experiencing replacements in Congregate care may reduce Reunification likelihood by approximately half.

The addition of community needs scores to the basic model generally has limited effect on other demographic and placement experience variables. For example, while gender is significant at the .01 level in the basic family reunification model, it is not significant when community needs are added to the model. Similarly, while both admission year variables are significant at the .001 level in the base model for family reunification, admission year 1996 is not significantly different from 1995 admissions, and 1997 admissions are only significantly at the .10 level. Among children in congregate care, the introduction of community needs

scores increases the hazard ratios for all ages of children, with significance ranging from .05 to .001 levels, and increases the apparent impact of admission year cohort effects.

Community needs scores are entered into the model using two methods. When entered as a continuous variable, with a score for each child based on the needs score for their home community, family-care models result in a community needs hazards ratio below 1, indicating that increasing community needs scores are associated with reduced likelihood of reunification when controlling for demographic and placement history variables. However, the Hazard Ratio for congregate care is 1.04, indicating an apparent inverse relationship between community needs and likelihood of Reunification in Congregate Care. This continuous community needs variable is only significant at the .01 level for children in family-based care, but are not significant for children in congregate care.

Quartiles of community need are also entered into the model, to identify any possible patterns of discontinuity in the relationship between community needs and child reunification. While the congregate care analysis again reveals no significant relationship, analysis of family-based care reveals that children in all quartiles of communities are more likely to experience reunification than those in the most needy quartile of communities ($p < .01$, $p < .10$, and $p < .01$, respectively). Complete results for these quartile analyses are not reported here, as they closely match those using the continuous community needs variable.

Lastly, Table 3 summarizes the effects of service agencies on the likelihood of reunification. Of the 45 agencies represented in the family-based model, 34 have results that are significantly above or below the comparison agency in the base case. However, the addition of community needs scores reduces the number of agencies with significant reunification effects to 20. Among congregate care agencies, the introduction of community

needs data has moderate effects on the number of agencies with significantly greater or less likelihood of reunification.

Table 4 presents data from the re-entry analyses, for both family-based and congregate care models. Results in the base model largely fall in directly opposite patterns as those in the Reunification base model—older children, those not Federally eligible, African-American children, and those experiencing prior stays in care greater than 60 days all have diminished likelihood of Re-entering care. These patterns largely hold for both Family- and Congregate-Care samples.

The addition of community needs scores to the basic models has few effects on the demographic and placement experience independent variables in the re-entry models, as was the case for the reunification models. Overall, adding community needs to the family-based care model appears to reduce the effect of age on the model's ability to predict re-entry, and the Hazard Ratio for Kinship Care drops from 0.93 to 0.49, indicating that children from Kinship foster homes have much less likelihood of re-entering care once discharged ($p < .01$). Introducing community needs into the congregate care analysis had few effects.

When community needs scores are entered as a continuous variable, community needs are not significant in the family-care model, but are significant in the congregate care sample ($p < .01$). In both cases likelihood of re-entry rises as community need increases. Quartile analysis of community needs were run in separate models, but only the coefficients relating to these variables are reported here, as other control variables generated similar Hazard Ratios and patterns of significance. This analysis finds hazard ratios greater than 1.00 for all three of the least needy quartile groupings.

Table 3. Results from Proportional Hazards Analysis, using Cox Regression—Reunification Models.

		Reunification-Family Care		Reunification-Congregate Care			
Number of Observations		15,606	11,074	3,829	2,022		
Overall Significance (Probability>Chi2)		0.0000	0.0000	0.0000	0.0000		
		Hazard Ratio	Hazard Ratio	Hazard Ratio	Hazard Ratio		
Gender (Base: Male)							
Female		1.07 ***	1.01	1.051	1.02		
Age (Base: Age <1)							
Age 1		1.23 *****	1.22 *****	1.606	3.40 *		
Age 2-4		1.32 *****	1.33 *****	1.745	3.07 **		
Age 5-7		1.33 *****	1.34 *****	1.770	2.84 **		
Age 8-10		1.41 *****	1.49 *****	1.397	1.54		
Age 11-13		1.33 *****	1.29 *****	2.011 **	3.47 ***		
Age 14-17		1.33 *****	1.26 ***	2.463 ***	4.71 *****		
Age 18+		1.94	2.07 ***	7.227 **			
Level of Care (Base: Foster Kinship Foster Care)		0.62 *****	0.64 *****				
Group Residence (13-25 Children)				1.004	0.75		
Group Homes (7-12 Children)				1.264 ***	1.19		
Agency Homes (1-6 Children)				0.905	0.98		
Residential Treatment				0.068 ***			
Financial Eligibility (Base: Federal IV-)							
Eligibility-Not Federal		2.60 *****	2.45 *****	0.990	1.26		
Eligibility- emergency Assistance		3.05 *****	3.28 *****	1.553 *****	1.62 *****		
Eligibility-Other		5.26 *****	4.41 *****	6.145 *****	2.06		
Eligibility-Missing		0.00	0.00	0.257			
Admission Year (Base: 1995)							
Admission Year 1996		0.91 *****	0.97	0.988	1.88 *****		
Admission Year 1997		0.87 *****	0.96	0.929	1.91 *****		
Race (Base: White)							
Race-Black		0.79 *****	0.82 ***	0.687 *	0.81		
Race-Hispanic		0.89 **	0.91	0.893	1.08		
Race-Other		0.90	1.01	0.925	0.44		
Race-Unknown		0.83 ***	0.87 *	0.790	1.09		
Siblings (Base: no siblings)							
Siblings-Not in Care		1.20 ***	1.37 *****	0.934	0.80		
Siblings-In Care		0.83 *****	0.90 ***	0.571 *****	0.92		
Replacements in Care (Base: No Child Experiences Replacement(s))		0.79 *****	0.73 *****	0.478 *****	0.97		
Agency Effects:							
Number Agencies-Not Significant		11	25	25	26		
Number Agencies. Significance<.10		34	20	11	7		
Significance Level (z)<.10		3	4	4	2		
Significance Level (z)<.05		11	2	5	2		
Significance Level (z)<.01		5	8	2	1		
Significance Level (z)<.001		15	6	--	2		
Community Need-Continuous Scale			0.97 ***		1.04		
Community Need-Quartiles		---	---	---	---		
First Quartile			1.14 ***		1.18		
Second Quartile			1.10 *		1.02		
Third Quartile			1.19 ***		0.95		

Lastly, introducing community needs scores into the re-entry models appears to have some effect on the number of contract family-based foster care agencies with re-entry rates significantly higher or lower than the median agency. Of 41 agencies represented in the family-based model, 21 were significantly above or below the comparison agency in the base case. However, the addition of community needs scores reduces the number of agencies with significant reunification effects to 15. Among congregate care agencies, introducing community needs data has modest effects on the number of agencies found to have significantly greater or less likelihood of re-entry.

Discussion

This analysis has several important limitations, requiring cautious interpretation of any findings. The first limitation which should be noted is the substantial number of cases with missing address data, a pattern which t-tests reveal as associated with significant bias to independent and dependent variables used in these models. While the very large sample sizes and use of propensity weights in the survival analysis models ameliorates the impact of missing data, the analysis presented here should probably be considered cautiously until verified by more complete data.

Table 4. Results from Proportional Hazards Analysis, using Cox Regression—Re-Entry Models.

		<u>Re-Entry Family Care</u>		<u>Re-Entry Congregate Care</u>	
Number of Observations		13,284	8,950	2,163	1,382
Overall Significance (Probability>Chi2)		0.0000	0.0000	0.0000	0.0000
		Hazard Ratio	Hazard Ratio	Hazard Ratio	Hazard Ratio
Gender (Base: Male)	Female	1.01	0.89	1.83 ****	1.21
Age (Base: Age <1)	Age 1	1.16	1.18	1.03	3.81 **
	Age 2-4	0.71 ****	0.81 *	0.00 ****	2.03
	Age 5-7	0.57 ****	0.64 ****	0.56	2.39 *
	Age 8-10	0.71 ***	0.74 **	2.04	1.85
	Age 11-13	0.91	0.97	2.31	1.22
	Age 14-17	0.54 ***	0.88	0.73	1.44
Level of Care (Base: Foster Home/Institution)	Kinshin Foster Care	0.93	0.49 ***		
	Group Residence (13-25 Children)			1.02	1.16
	Group Homes (7-12 Children)			2.51 ***	1.08
	Agency Homes (1-6 Children)			1.59	1.29
Financial Eligibility (Base: Federal IV-)	eligibility-Not Federal	0.21 ****	0.21 ****	0.55 **	0.51
	eligibility- emergency Assistance	0.23 ****	0.23 ****	0.59 ****	0.45
	eligibility-Other	0.00	0.00 ****	0.00 ****	0.00
Discharge Year (Base: 1996)	Discharge Year 1997	1.00	0.94	0.63 ***	0.96
	Discharge Year 1998	0.72 ****	0.75 ***	0.82	0.65 ***
Race (Base: White)	Race-Black	1.97 ***	1.77 **	2.88 **	0.58 **
	Race-Hispanic	1.28	1.17	1.70	0.69
	Race-Other	0.91	1.14	2.83	1.47
	Race-Unknown	1.30	1.10	1.90	0.63 *
Siblings (Base: no siblings)	Siblings-Not in Care	0.54 ***	0.45 **	1.83 ***	0.59 ***
	Siblings-In Care	1.17 **	0.98	1.75 ****	0.86
Duration Previous Snell (Base: Less than 31	Duration 31-60 Days	1.15	1.29 **	0.84	0.84
	Duration 61-180 Days	0.56 ****		0.00	
	Duration 181-365 Days	0.50 ****	0.64 ****	0.00 ***	0.00 ****
	Duration 366-730 Days	0.22 ****	0.31 ****	0.00 ****	0.00 ****
	Duration 731 or more Days	0.16 ****	0.23 ****	0.21 ***	0.00 ****
Agency Effects:	Number Agencies-Not Significant	20	26	16	20
	Number Agencies. Significance<.10	21	15	11	7
	Significance Level (z)<.10	5	4	1	1
	Significance Level (z)<.05	4	3	7	4
	Significance Level (z)<.01	9	4	1	2
	Significance Level (z)<.001	3	4	1	--
Community Need-Continuous Scale			1.01		1.14 ***
Community Need-Quartiles	First Quartile		1.13		1.34
	Second Quartile		1.43 **		1.17
	Third Quartile		1.19		1.21

More broadly, interpretation of the results of this analysis is also limited by a lack of case mix or risk adjustments in the data available in these settings, which makes more complex the interpretation of results regarding the relationship between community need and foster care outcomes presented here. Specifically, these models lack appropriate adjustments for a variety of child and family risk factors which are widely known to affect service outcomes in these settings, including such domains as substance abuse, health and mental health needs, domestic violence, or housing needs. In a sense, the failure to include these variables which the research literature would widely associate with the outcomes of interest, could represent a substantial specification error in these models. Such errors may introduce substantial bias into hazard ratios reported here

In effect, community need scores are serving “double duty” in the event history models presented here. On one hand, community need scores serve as a proxy or instrumental variable, representing the range of unmeasured risk adjustments which should be included in a fully specified model. While the extent of missing values for this variable and the challenges of developing valid measures of community need may somewhat affect the precision of these measures, the use of weighting methods to adjust for missing data and the broad support for the community need scales within the subject jurisdiction should increase confidence in the precision of these measures. Most importantly, including community need should represent a clear and substantial improvement in the specification of these outcomes models, and reduce bias in hazard ratios calculated in the event history analyses presented here. This impact may be most clearly reflected in child race/ethnicity and service agency dummy variables which both have reduced patterns of significance when community need scores are introduced.

Finally, the scope of outcome measures used as dependent variables may also represent a limitation of this work. One set of limitations in this area are the measures used here; for example, quicker Reunification of children in foster care with their families is a beneficial outcome, only to the extent that the child is safe and well cared for at all times. At the same time, even if safety and well-being of the child can be assured upon return to their family, it is possible that the resources and support available from foster caregivers would provide additional benefit to the child's development relative to what is that child is likely to experience in their family. More broadly, the outcome measures reflected in this model fail to account for other observable outcomes which may be of interest (e.g., child transfers within placement, or unexcused absences from care) or for other outcomes which might be harder to objectively observe but which could be subjectively assessed, such as child behaviors, parenting activities/skills, health/mental health status, or substance abuse within the family.

At the same time, statistically significant findings are demonstrated that community need is associated with some child foster care outcomes. As a result of this dual role, it is not possible at this time to determine whether community needs themselves are impacting on child foster care outcomes and/or whether their impact is derived from their service as proxies for unmeasured child and family needs, risks and strengths.

Even with these limitations, this analysis offers valuable insights on several domains. At the broadest level, this research offers limited but measurable support for the impact of community needs on children's likelihood of reunification from family-based foster care, the most common service model used for children in out-of-home care. This finding lends support to policy analysts, managers and advocates who have called for the adoption of community-based child and family service models. The lack of significant associations

between community needs and child Reunification in congregate care settings may reflect the greater clinical service needs of children placed in these more intensive settings. Higher community need scores are also associated with increased risk of Re-entry in Congregate Care settings.

Incorporating community needs also appears to offer benefit in evaluating foster care services. One evocative finding in this vein is the reduction in the impact of race on outcomes in several of these models. While this effect is not definitive and may in part reflect the substantial interaction between race and community needs across the range of New York City's 59 community districts, it offers limited support for incorporating community need characteristics into models which include ethnic or racial categories as control variables, and may explain some of the apparent association between ethnic/racial group membership and foster care outcomes [Courtney, Barth and Park, 1996].

Also notable is the impact community need has on agency effects in these models. While the addition of community needs had little effect on observed outcomes for children in congregate care, there were shifts at the family-care level in both reunification and re-entry models. The number of service agencies with reunification outcomes significantly above or below average dropped from 34 to 20 when community needs were added to the model. The re-entry model saw a reduction from 21 to 15 agencies with significant results. This would appear to imply that differences in agency service quality or programmatic approach has less impact on child outcomes, once community context is considered.

The results of this analysis also highlight the need to incorporate risk adjustments when evaluating outcomes in child and family service programs, and the potential usefulness of proxy measures when policy researchers are working in real-world settings where not all

needed data may be available. In this sense, the community needs data incorporated in this analysis are used as a proxy for clinical or program service need data on children and/or family members.

Future work in this area could focus in two directions. First, replicating this analysis with more complete address and/or community needs data might yield more reliable assessments of the relationship between service outcomes and community needs. Future analysis should also seek to incorporate measures of child and family service needs in addition to community need scores. This would allow evaluation models to account for a wider range of clinical and other service needs of children and families served by these programs, would allow more precise examination of whether community needs scores can serve as proxies for more complex clinical needs data, and permit more complete conclusions to be drawn as to the relationship between community needs and service outcomes in foster care.

Chapter 7. Evaluating Foster Care Services: Integrating Qualitative and Quantitative Methods

Introduction

This paper seeks to contribute to our understanding of evaluation methods in foster care services by examining the impact of quality-of-care measures on child foster care outcomes, using data from three analytic tools developed by the New York City Administration for Children's Services (ACS). Among the many challenges facing those interested in impacting U.S. foster care systems is developing valid, reliable methodologies for evaluating the Quality of outcomes for the children, families and communities affected by these services. One set of approaches to foster care program evaluation have focused on the use of administrative data systems to assess child outcomes from foster care, typically using event history proportional hazards methodologies [Wulczyn, Orlebeke, and Melamid, 2000; Fraser, Pecora, and Popuang, 1992]. Other researchers have emphasized the need to include a broader range of measures in any effective foster care program evaluation.

One very comprehensive framework suggested by Courtney [1993] highlights the importance of foster care evaluations including measures of program structural characteristics (including physical plant, staff ratios, and staff qualifications/training), program process characteristics (including timeliness of assessment and treatment planning, and quality and timeliness of all casework contacts and visitation), and child and family outcomes (including reunification, reentry, adoption, and transfer/absence from care events, as well as client behavioral, emotional, and attitudinal shifts and client satisfaction measures). However, this author acknowledges that such comprehensive reviews are particularly challenging given: (a) the lack of child and family need assessment tools with test-retest validity, (b) the complexity

and cost of comprehensive evaluation, and (c) the diversity and lack of standardization in case reporting practices [Courtney, 1993, p.28; Magura and Moses, 1986].

There are a number of reasons for the relative absence of child and family well being measures in these organizations, including the difficulty of defining and measuring clinical and service needs, reluctance on the part of researchers and program managers to use tools which might negatively label children and families and/or set unrealistic expectations for systems to “fix” children and families with severe, complex and the long-standing problems [Altshuler and Gleeson, 1999, p.128]. Development of client need assessment tools and implementation of comprehensive program evaluation systems in child welfare requires researchers and program managers to balance organizational culture and evaluation methodologies [Usher, 1995]. Ultimately, development of comprehensive need assessment and risk management systems may well represent the most substantial challenge facing child welfare systems today [Gambrill and Shlonsky, 2001].

This study reports correlation scores for each measure at the program level, summarizes reunification, re-entry and adoption finalization rates, and also uses proportional hazards analysis of data available on individual children within this system to examine the effect certain of these Quality of Care measures have on outcomes for children in foster care. A goal of this work is to identify strategies available to managers, evaluators, advocates and clients who wish to better understand the effectiveness of different programs, as well as suggesting useful strategies for child service systems that are just beginning to develop enhanced program evaluation tools for foster care. Finally, this study may offer insights into other approaches that researchers and evaluators may wish to explore to continue improving available techniques for evaluating foster care services.

Methodology

Setting: As noted above, data used in this analysis are from the New York City Administration for Children's Services (ACS), the nation's second largest foster care jurisdiction [Needell et al., 2001]. Beyond its sheer size, this service jurisdiction is relatively unique in its reliance on more than 50 separate contract non-profit agencies to provide out-of-home placement services for approximately three-fourths of children in its care [ACS Monthly Indicator Report, April 2001; Melamid et al., 1998]. While few jurisdictions have this substantial a reliance on contract service agencies, this setting offers an excellent opportunity to examine effects of program Quality on service outcomes across a large number of separate service programs operating within one jurisdiction.

Data Sources: ACS' foster care program evaluation structure relies on *triangulation*—the use of multiple, well-designed measures to enhance and confirm the validity of evaluation scores for any subject [Campbell and Fiske, 1959; Crano, 1981; Greene and McClintock, 1985; McClintock and Greene, 1985]. The three sources of information used in this analysis are: (1) Compliance/Timeliness of administrative activities of contract agencies (Contractor Overall Performance Evaluation System), (2) quantitative outcomes measures (ACS/Chapin Hall Outcomes Analysis), and (3) Quality of Care reviews (Program Evaluation System). Using multiple approaches to combine evaluation results for the same subjects not only provides more accurate overall evaluation results, but can also provide more detailed portraits of the strengths and weaknesses of programs being evaluated. Figure 1 summarizes the basic characteristics of these three methodologies.

Figure 1. Foster Care Program Evaluation Methodologies—New York City Administration for Children's Services.

	Contractor Overall Performance Evaluation System (COPES)	Program Evaluation System (PES)	ACS/Chapin Hall Outcome Measures (ACHOM)
Domain	Compliance/Timeliness	Quality of Care	Outcomes
Data Sources	Administrative Reports	Case Record Reviews Structured Interviews Site Observations	Agency Administrative Database
Sample Frame	Agency Performance Reports Tabulated for each Agency or Direct Service Unit	Random Sample Children In-Care, by Level of Care within Agencies	Administrative Data on all Children Children, by Admission & Discharge Cohorts
Methods	Administrative Reports from Various Oversight Units	Data Collection Instruments, Summed for each Service Program within each Agency	Proportional Hazards Survival Analysis, Controlling for Child Demographic & Placement Characteristics
Items	<i>Timeliness</i> Service Plans Corrective Actions Home Recertifications Foster Parent Training <i>Efficacy</i> Indicated Abuse/Neglect Adoptive Finalizations Placement Complaints Congregate Site Reviews <i>Fiscal</i> Audit History Deficient Internal Controls	<i>Basic Welfare</i> Food Clothing Shelter Health/Mental Health Care Child Safety <i>Normal Growth/ Development</i> Emotional Health Education Support Recreation Services Behavior Management Preparation for Self-Care <i>Process</i> Service Planning Service Implementation Visitation/Contacts	<i>Reunification Rates:</i> Family-Based Care Congregate Care <i>Re-Entry Rates:</i> Family-Based Care Congregate Care <i>Adoption Finalization Rates:</i> Family-Based Care
Data Collectors	ACS Administrative/Oversight Units, including, case management, program development, placement, adoption, & fiscal units	Program Evaluation Review Team (24 Staff)	Chapin Hall Center for Children & ACS Office of Management Development and Research

Compliance/Timeliness Measures: ACS' longest-established method for assessing the quality of services delivered by contract and directly managed foster care agencies is its *Contractor Overall Performance Evaluation System*, which generates agency administrative Compliance/Timeliness scores. As can be seen in Figure 1, the Compliance/Timeliness measures fall into three broad categories—timeliness of completion of casework activities, success or failure in achieving key service objectives, and assessments of contract agency fiscal management.

Within each of these categories, data are collected from administrative reporting systems operating in a variety of agency program development and oversight units. Each service agency is measured on all indicators that are appropriate to their scope of service, and overall agency Compliance/Timeliness scores are tabulated for each agency calculated on a scale from 0.00 to 1.00. Data reported in this study were collected in 1998 and reported in 1999, so as to match data collected using the other methodologies.

Quality of Care Measures: One effort to enhance ACS program evaluation capacity surrounded the creation of validated tools to review Quality of program services for statistically valid samples of case records in each foster care agency. The *Program Evaluation System* (PES) uses multiple instruments to gather information from different sources to discern “meaningful differences in Program Quality” across foster care programs [Wells, 1999]. Development of these measures grew out of an expert panel which identified a list of approximately 700 variables that could be included in a foster care review system. Researchers then developed a comprehensive set of case review, site observation and structured interview questionnaires designed to collect data on these variables, and a designed sampling plan. Two pilot studies were conducted to collect these data, which were then

subject to analysis of consistency and reliability, as well as qualitative item review, using the judgment of consulting staff who developed the Quality scales [Wells, 1999, p.4-1]. This pilot study resulted in a reduced set of instruments and items used in the final PES, reported for the first time by ACS in 1998, based on case reviews conducted in 1996-1997.

The Quality of Care tools collect data from a random sample of cases representing children in-care with a given level of care or program type within each direct care or contract service agency (e.g., traditional foster boarding homes, kinship foster boarding homes, group homes, agency boarding homes, institutions). For each child selected for review, a dedicated team of ACS staff completes case record reviews, site observations and structured interviews with the social workers, child care workers, foster parents and parents. Program and agency scores are derived by aggregating scores across each child within each analysis unit.

Quality of Care data represent three conceptual subscales:

- Basic Welfare, reflecting the programs ability to ensure physical safety and basic needs of the child;
- Normal Growth and Development, reflecting care that children require to become functioning members of society, such as schooling, recreation and nurturing relationships; and
- Process, reflecting responsibilities of program staff, foster caregivers and other program actors that are linked to positive outcomes for children in care, including service planning, provision of needed supports and services, client contacts, and family visitation [Wells, 1999].

A fourth sub-scale, Client Satisfaction, was dropped from these analyses due to lack of consistent and reliable measurement qualities. ACS and contract agency staff found results at the subscale level difficult to interpret, and so have developed revised scales from specific items contained within the case record review data, including scales for reunification services, service planning, casework contacts and visitation, and assessments [Edell, 2001].

Quantitative Outcome Indicators: The final element in the ACS program evaluation strategy was the implementation of quantitative measures of child outcomes from the foster care system. This approach, which was jointly developed by ACS and the Chapin Hall Center for Children at the University of Chicago, relies on ACS' administrative database to evaluate several key experiences children have in moving through the foster care system [Wulczyn, Orlebeke, and Melamid, 2000]. This analysis uses event history analysis methods to evaluate:

- reunification rates, measured by the likelihood of children returning to their parents or primary resource person given the amount of time they have been in care;
- re-entry rates, the risk of a child returning to foster care within one year of a discharge home; and
- adoption finalization rates, reflecting the likelihood of a child with a goal of adoption experiencing their final adoption in any given time period.

The reunification and adoption models use cohorts of children admitted to care over a given period, while the re-entry model focuses on cohorts of children discharged from care. All models control for a variety of child demographic and placement history characteristics recorded in the ACS database [Wulczyn, Orlebeke and Melamid, 2000; Fraser, Pecora, and

Popuang, 1992]. The analysis of the Reunification rates reported here focus on children first admitted to care in 1995, 1996, and 1997, while the analysis of Re-entry rates focuses on the cohort of children experiencing their first returns home in 1996, 1997 and 1998. The Adoption analysis uses cohorts of children first admitted in 1992, 1993 and 1994 to better reflect the length of time required for a child to move into and through the adoption process.

Analytic Methods: The first set of analyses presented in this paper are descriptive statistics and correlations of calculated scores, across the three methods described above, for each agency. These analyses provide basic measures of the results from the different models, and will be used to highlight commonalities and differences across programs assessed using these tools. Measures of central tendency are also presented for reunification, re-entry and adoption finalization rates and length of time to outcomes across quartiles of agency performance on both the Compliance/Timeliness and Quality of Care measures.

The remaining analyses reported here explicitly build upon the proportional hazards Outcomes models developed by ACS and Chapin Hall and described in the previous chapter of this work [Wulczyn, Orlebeke and Melamid, 2000]. This work supplements these basic Outcomes models, adding agency-level performance scores from the Compliance/Timeliness and Quality of Care measures to assess whether program level measures of service quality contribute significantly to reunification, re-entry and adoption outcomes for children. All basic models are also supplemented by the inclusion of community need scores, reflecting the impacts measured community level risks may have on foster care outcomes. As reported in Chapter Six of this work, these community need measures have been found to have statistically significant effects on some results obtained from these models. In this model, these measures also serve as proxies for child and family service need risk adjustments which,

though difficult to reliably measure, should be considered in evaluating outcomes from services to at-risk populations [Courtney, 1993; Altshuler and Gleeson, 1999].

Estimating these models at the individual child level was considered, but was not feasible, primarily due to samples that were too small and too systematically biased when Quality and Outcome data were merged. In addition, Compliance/Timeliness were only available at the program level, but not at the individual child level. In this case bias arises from the different sampling frames used for the datasets in this analysis: while the Outcome models are estimated using data from annual cohorts of children experiencing first placements or first re-entrances, Quality data are collected from an in-care sample. In most cases, sampling within in-care populations introduces risk of skewing placement duration longer and reunification rates lower than would be found over a sample drawn from entry cohorts of children [Wulczyn, Bruner, and Goerge, 1999]. In this analysis, merging the in-care, point-in-time Quality of Care data with the entry-cohort outcomes data resulted in children having longer stays in care being over represented relative to those with shorter stays, and an insufficient number of cases to reliably weight data to correct this bias.

Results

Correlation Analysis: Scores on the Compliance/Timeliness, Quality and Outcomes measures were tabulated for most of the 61 service agencies under contract with ACS in 1996-1997. Table 1 presents descriptive statistics for the indicators reported from the three evaluation tools described above. Note that only data relating to non-profit contract providers is presented in this analysis, since outcomes data were not available for direct service agencies during this time period. Note also that the number of agencies included in each of these

measures varies, since not all programs provide service in all measured areas, or due to sample sizes too small to generate reliable performance measurements.

Table 1. Descriptive Statistics for ACS Evaluation Measures: Compliance/Timeliness (COPES), Quality (PES), and Outcomes (ACS/Chapin Hall Measures) Scores, 1998 and 1999

	Number Agencies	Mean	Std. Dev.	Min	Max
	-----	-----	-----	---	-----
1998 Results (All Services):					
Process	59	3.07	0.78	1	4
Outcomes: Average	61	1.09	11.48	-30	27
Outcomes: Reunification	61	0.41	12.40	-35	43
Outcomes: Re-Entry	42	-0.45	5.59	-16	13
Outcomes: Adoption	47	4.43	26.59	-53	54
Quality: Average	45	0.78	0.06	0.59	0.89
Quality: Basic Welfare	45	0.85	0.07	0.6	0.94
Quality: Normal Growth	42	0.74	0.07	0.5	0.88
Quality: Process	42	0.78	0.08	0.48	0.87
1999 Results (Family Care only):					
Process	41	0.77	0.12	0.49	1.00
Outcomes	41	0.65	0.11	0.33	0.87
Quality	41	0.81	0.04	0.73	0.87

As can be seen in this table, the three tools result in scores that are very differently scaled. For example, while Compliance/Timeliness scores range from 0.49 to 1.00, Adoption Outcome scores range from -53 to +54, and Quality of Care values from .48 to .94 across the three measures.⁷ Quality of Care results were much higher on the Quality/Basic Welfare sub-

⁷ These relative performance calculations were made in the base model by selecting 18 repeated random samples of children across all agencies, and assessing the performance of each agency relative to this randomly selected sample. Agencies were given a score from -3 to +3 for each of these 18 iterations, representing the number of standard deviations separating their calculated hazard ratio from the value of the random sample. As a result agency outcome scores can range from -54 to +54, across these 18 iterations. The number of iterations was established empirically—analysts repeated iterations until five repeated samples revealed no shifting in the rank ordering of agency performance on the most widely ranging model, reunification from family care. ACS and Chapin Hall have subsequently replaced this multiple iteration approach with an approach that uses the median performing agency as the comparison agency for purposes of determining relative performance. This later approach is used in the analyses presented in this dissertation.

scale (mean=.85) than on Quality/Growth and Development (mean=.74) and Quality/Process sub-scales (mean=.78). This result was expected, given the substantial regulatory oversight of agencies in the areas covered by the Basic Welfare measure. Also notable were the differences in measures of dispersion among Outcome measures—standard deviations and ranges of scores for Re-Entry are much narrower than those for Reunification and Adoption, reflecting less variation in this measure.

Prior to performing correlation analysis on these results, the normality assumption was tested for all variables, using Beta-One statistics calculated by dividing the third moment measure for this distribution (skewness) by its second moment measure (standard error). Scores between -2 and $+2$ were considered to reflect a normal underlying distribution for these variables. Quality of Care Basic Welfare, Normal Growth and Process measures had Beta-One values below -2 , reflecting their non-normal distribution, strongly skewed towards the low end of the distribution for these scores. Correlation analyses and significance tests across the seven measures are presented in Table Two, with Kendall's Tau_B Correlation calculations used to calculate correlations involving the three variables determined to have outlier values, and Pearson correlations for variables determined to be normally distributed.

Tables 2. Correlations and Significance Levels: ACS Program Evaluation 1999

Compliance/Timeliness , 1998 Quality and 1998 Outcomes Scores, including subscales, Agency Level.

	Process	Outcomes: Reunification		Outcomes: Re-Entry		Outcomes: Adoption		Outcomes: Total		Quality: Basic Welfare ^a		Quality: Normal Growth ^a		Quality: Process ^a		Quality: Total
Outcomes: Reunification	0.14		Outcomes: Re-Entry	0.28		Outcomes: Adoption	0.05		Outcomes: Total	0.57		Quality: Basic Welfare ^a	0.28		Quality: Normal Growth ^a	0.12
Outcomes: Re-Entry	0.78	-0.31	Outcomes: Adoption	0.05		Outcomes: Total	0.18		Quality: Basic Welfare ^a	0.02		Quality: Normal Growth ^a	0.36		Quality: Process ^a	0.17
Outcomes: Adoption	0.00	0.23	Outcomes: Total	0.65		Quality: Basic Welfare ^a	0.04		Quality: Normal Growth ^a	0.23		Quality: Process ^a	0.18		Quality: Total	0.31
Outcomes: Total	0.59	N/A	Quality: Basic Welfare ^a	N/A		Quality: Normal Growth ^a	0.01		Quality: Process ^a	0.29		Quality: Total	0.02			
Quality: Basic Welfare ^a	0.02	0.59	Quality: Normal Growth ^a	1.00		Quality: Process ^a	0.73		Quality: Total	0.01						
Quality: Normal Growth ^a	0.12	0.13	Quality: Process ^a	-0.01		Quality: Total	0.21			0.40						
Quality: Process ^a	0.36	0.25	Quality: Total	0.96			0.07			0.00						
Quality: Total	0.31	-0.02		0.22			0.24			0.12						
	0.02	0.89		0.16			0.03			0.36						
				0.09			0.13			N/A						
				0.47						N/A						

^a-Correlation and Significance levels for these items were calculated using Kendall's Tau-B statistics, due to non-normal distributions.

Compliance/Timeliness Correlations: The results of the correlation analysis present a complex picture of the three sets of measures used in the ACS evaluation system. Overall, Compliance/Timeliness scores are significantly correlated with agency total scores for both

the Quality of Care and Outcomes (respectively, Pearson's $r=0.59$, $p=0.00$, two tailed; Pearson's $r=0.31$, $p=0.02$, two tailed). While the correlations between Compliance/Timeliness scores and all three of the Quality of Care sub-scales are positive, only Basic Welfare correlates with Compliance/Timeliness at a statistically valid level (Pearson's $r=0.28$, $p=.02$, two tailed). This is not surprising, since the Quality/Basic Welfare scale focuses on the ability of service agencies to meet the fundamental health and safety needs of children in care, and thus would be expected to track closely with Process measures which focus on timely completion of regulatory requirements relating to children in care. Adoption Finalizations are significantly correlated with overall Process score, though this is expected given that Adoption represent approximately one-fifth of the total points available in this scale (Pearson's $r=.57$, $p=.00$, two-tailed). Correlations between Process and the other two Outcome Measures (Reunification and Re-Entry) are not significant.

Quality Correlations: The only patterns of significant correlation found between the Quality measures and the Outcome results are Adoption Finalizations with the Quality/Process sub-scale (Kendall's Tau_B $r=.24$, $p=.03$, two tailed). Among the Quality sub-scales, Quality/Process is moderately correlated with the other two scales, but Quality/Basic Welfare and Quality/Normal Growth and Development sub-scales are not significantly correlated with each other (Pearson's $r=.12$, $p=.30$, two-tailed).

Summary Statistics--Outcomes versus Quality and Process Scores: Tables 3a and 3b present measures of central tendency for the outcome measures used in the survival analyses, by quartiles of agency performance on the Process and Quality of Care measures, respectively. This analysis shows a pattern in which agencies having higher Compliance/Timeliness scores tend to have improved outcomes. Among family-based

service programs, reunification rates increase (from 70 percent observed reunified to 78 percent) and time in care declines (from 557 to 428 days) across the four quartiles, while re-entry rates are notably lower for children served by agencies which receive the highest Compliance/Timeliness scores, though agencies in quartiles two and three unexpectedly have higher re-entry rates than those in the lowest quartile. Patterns for congregate care programs are similar, though somewhat more mixed. Finally, adoption finalization rates also generally increase as Compliance/Timeliness performance rises, with days to adoption declining by almost one year from the lowest to the highest quartiles (from 1799 to 1482 days).

Quality of Care measures reported in Table 3b reveal a much less clear relationship to outcomes. Among family-based service programs, there is relatively little variation in reunification, reentry or adoption rates or timeliness across service Quality quartiles. At the congregate care level, generally higher reunification rates are seen as Quality of Care measures rise, while length of stay in care also rises by a significant degree (from 178 to 304 days). This latter result is not necessarily negative, as it might signify reduced absences or transfers for programs with higher quality scores.

Program Level Proportional Hazards: Analysis of the impacts of Compliance/Timeliness and Quality measures on child foster care outcomes was undertaken using proportional hazards event history models, implemented using Stata's Cox survival analysis protocols [Stata Press, 1997]. As noted above, the basic Outcome models were originally developed to support evaluation of New York City's foster care programs [Wulczyn, Orlebeke, and Melamid, 2000]. The models presented here are amended from this basic model in two ways: (1) community needs scores are added to serve as a proxy for child and family risk adjustments [Melamid, 2001]; (2) relevant Quality of care and agency

Compliance/Timeliness measures are added to assess the impact of measured service performance on foster care outcomes for children in this sample.

Table 3a. Mean and Standard Deviation Outcomes & Process Scores

<u>Days to Reunified</u>		<u>Family-Based Care</u>		<u>Congregate Care</u>		
	<u>Obs</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>Obs</u>	<u>Mean</u>	<u>Std. Dev.</u>
Process Quartile 1	3591	566.57	582.87	840	184.74	325.24
Process Quartile 2	3910	508.14	557.07	729	264.98	393.44
Process Quartile 3	3791	449.61	524.47	794	140.57	248.82
Process Quartile 4	2758	428.46	495.78	729	397.25	436.96
Process Missing	850	388.88	361.14	21	281.76	406.17
 <u>Percent Reunified</u>						
Process Quartile 1	3591	0.70	0.46		0.57	0.50
Process Quartile 2	3910	0.71	0.45	729	0.59	0.49
Process Quartile 3	3791	0.76	0.43	453	0.55	0.50
Process Quartile 4	2758	0.78	0.42	729	0.60	0.49
Process Missing	850	0.52	0.50	21	0.57	0.51
 <u>Days to Reentry</u>						
Process Quartile 1	2734	367.60	84.19	497	345.28	104.89
Process Quartile 2	2956	366.05	84.59	386	349.27	94.13
Process Quartile 3	2846	363.53	88.54	453	344.95	99.86
Process Quartile 4	2038	375.57	69.00	410	343.80	103.57
Process Missing	450	366.14	78.12	12	388.00	27.71
 <u>Reentry Rate</u>						
Process Quartile 1	2734	0.10	0.31	497	0.14	0.35
Process Quartile 2	2956	0.11	0.32	386	0.11	0.32
Process Quartile 3	2846	0.13	0.34	453	0.17	0.37
Process Quartile 4	2038	0.09	0.29	410	0.11	0.32
Process Missing	450	0.14	0.35	12	0.00	0.00
 <u>Days to Adoption</u>						
	=					
Process Quartile 1	1146	1798.83	558.84			
Process Quartile 2	1310	1689.33	534.37			
Process Quartile 3	1066	1685.31	536.56			
Process Quartile 4	689	1481.77	535.70			
Process Missing	123	1378.08	396.74			
 <u>Adoption Rate</u>						
Process Quartile 1	1146	0.63	0.48			
Process Quartile 2	1310	0.70	0.46			
Process Quartile 3	1066	0.70	0.46			
Process Quartile 4	689	0.78	0.42			
Process Missing	123	0.22	0.42			

Table 3b. Mean and Standard Deviation- Quality & Outcome Scores

<u>Days to Reunified</u>	<u>Family-Based Care</u>			<u>Congregate Care</u>		
	<u>Obs</u>	<u>Mean</u>	<u>Std.</u>	<u>Obs</u>	<u>Mean</u>	<u>Std. Dev.</u>
Quality Quartile 1	3848	494.64	542.20	953	167.87	264.02
Quality Quartile 2	2843	501.07	540.76	640	195.37	336.37
Quality Quartile 3	3971	459.57	524.56	573	269.87	403.86
Quality Quartile 4	3469	507.61	550.97	636	304.45	412.91
Quality-Missing	769	421.70	504.30	311	392.92	457.54
 <u>Percent Reunified</u>						
Quality Quartile 1	3848	0.67	0.47	953	0.54	0.50
Quality Quartile 2	2843	0.72	0.45	640	0.58	0.49
Quality Quartile 3	3971	0.76	0.43	573	0.61	0.49
Quality Quartile 4	3469	0.73	0.44	636	0.61	0.49
Quality-Missing	769	0.77	0.42	311	0.57	0.50
 <u>Days to Reentry</u>						
Quality Quartile 1	2755	367.63	81.37	485	348.20	104.08
Quality Quartile 2	2086	363.08	91.56	339	339.51	101.22
Quality Quartile 3	3101	369.47	78.70	372	344.15	97.17
Quality Quartile 4	2437	365.41	85.91	364	352.80	92.47
Quality-Missing	645	380.53	60.71	198	342.84	111.50
 <u>Reentry Rate</u>						
Quality Quartile 1	2755	0.11	0.31	485	0.10	0.30
Quality Quartile 2	2086	0.12	0.33	339	0.20	0.40
Quality Quartile 3	3101	0.11	0.31	372	0.16	0.36
Quality Quartile 4	2437	0.12	0.33	364	0.11	0.31
Quality-Missing	645	0.08	0.27	198	0.10	0.30
 <u>Days to Adoption</u>						
Quality Quartile 1	1624	1691.03	552.98			
Quality Quartile 2	429	1670.12	495.63			
Quality Quartile 3	1060	1664.33	545.75			
Quality Quartile 4	993	1685.54	563.94			
Quality-Missing	228	1582.52	571.84			
 <u>Adoption Rate</u>						
Quality Quartile 1	1624	0.63	0.48			
Quality Quartile 2	429	0.75	0.43			
Quality Quartile 3	1060	0.72	0.45			
Quality Quartile 4	993	0.70	0.46			
Quality-Missing	228	0.69	0.46			

This analysis seeks to examine how agency-level Quality of Care and Administrative Process affect children's outcomes in foster care. For this analysis each child in the sample is assigned the average Compliance/Timeliness and Quality scores of the agency serving that child, including scores from both the original subscales and the alternative subscales within the Quality measure. The results of this analysis are presented in Table Four. As can be seen, the five basic models control for child gender, age, race, financial eligibility (a proxy for poverty), having siblings in placement, level of foster care placement, admission/discharge year, duration of time in care, and whether the child experiences multiple placement settings. The majority of these control variables exhibited significant impacts on child reunification, re-entry, and adoption finalization rates, though community need scores were only statistically significant for reunification in family based settings.⁸ The patterns of significance and hazard ratios for these control variables closely match results from the base models [Wulczyn, Orlebeke and Melamid, 2000].

⁸ Note that community need is not included in the adoption model due to substantial patterns of missing community data for the children included in this sample.

Table 4. Proportional Hazards Analysis—Agency Level Outcomes, Compliance/Timeliness and Quality Scores

	Number of Observations	Reunification - -Family Care	Reunification --Congregate	Reentry -- Family Care	Reentry -- Congregate	Adoption -- Family Care
Overall Significance (Probability>Chi2)	11,074	0.0000	2,022	8,950	1,382	4,334
		Hazard Ratio	Hazard Ratio	Hazard Ratio	Hazard Ratio	Hazard Ratio
Gender (Base: Male)						
Female		1.05	0.94	1.08	2.65 ****	1.07
Age (Base: Age <1)						
Age 1		1.27 ***	7.42 ***	1.30		0.55 ****
Age 2-4		1.30 ****	9.10 ****	0.67 *		0.43 ****
Age 5-7		1.32 ***	4.35 **	0.50 **	0.07	0.52 ****
Age 8-10		1.40 ****	4.36 **	0.60	0.31	0.58 ****
Age 11-13		1.33 ***	5.72 ***	0.85	0.21	0.95
Age 14-17		1.29 **	8.01 ***	0.55	0.06	1.01
Age 18		2.10 ***	33.05 ***			
Level of Care (Base: Foster Home/Institution)						
Kinship Foster Care		0.63 ****		0.80		1.20 *
Group Residence (13-25 Children)			1.31		1.64	
Group Homes (7-12 Children)			1.59 ****		1.99 **	
Agency Homes (1-6 Children)			1.07		0.88	
Residential Treatment			0.13 *			
Financial Eligibility (Base: Federal IV-E)						
Eligibility-Not Federal		2.44 ****	0.73 **	0.30 ***	0.51 **	1.66 ****
Eligibility-Emergency Assistance		3.28 ****	1.45 ***	0.24 ****	0.45 ***	1.32 ***
Eligibility-Other		4.82 ****	5.03 ***			
Eligibility-Missing						
Admission Year 1994 (Base: 1993)						1.05
Admission Year 1995 (Base: 1993)						1.05
Admission Year 1996 (Base: 1995)		0.96	0.90			
Admission Year 1997 (Base: 1995)		0.90 *	1.01			
Discharge Year 1998 (Base: 1997)				0.90	0.40 **	
Discharge Year 1999 (Base: 1997)				0.60 ***	0.28 ***	
Race (Base: White)						
Race-Black		0.80 **	0.64 *	2.52 *	1.16	0.81 **
Race-Hispanic		0.89	0.88	1.60	0.46	0.69 ***
Race-Other			0.56	2.76 *	0.79	0.73 *
Race-Unknown		0.85	0.79	1.65	0.83	0.75 **
Siblings (Base: no siblings)						
Siblings-Not in Care		1.32 **	1.62 ****	0.41 **	1.24	1.64 ****
Siblings-In Care		0.89 *	0.88	0.87	1.13	0.90 **
Duration Current Spell in Care (Base-none)						
Duration under 60 days						0.87
Duration 60-180 days						0.81
Duration 181-365 days						0.95
Duration 1-2 years						1.70 ****
Duration 2+ years						4.37 ****
Duration Last Spell (Base: Less than 31 Days)						
Duration 31-60 Days				1.15	1.22	
Duration 61-180 Days				0.45 ****	1.29	
Duration 181-365 Days				0.50 **	0.41 **	
Duration 366-730 Days				0.23 ****	0.21 ****	
Duration 731 or more Days				0.16 ****	0.49	
Replacements in Care (Base: No Replacements)						
Child Experiences Replacement(s)		0.75 ***	0.59 ***			
Agency Effects:						
Number Agencies-Not Significant		36	30	39	31	39
Number Agencies, Significance<.05		9	6	2	5	5
Community Need-Continuous Scale		0.97 *	0.95	0.99	0.96	N/A

	Reunification - -Family Care		Reunification --Congregate		Reentry -- Family Care		Reentry -- Congregate		Adoption -- Family Care	
	<u>Hazard Ratio</u>		<u>Hazard Ratio</u>		<u>Hazard Ratio</u>		<u>Hazard Ratio</u>		<u>Hazard Ratio</u>	
Process-2nd Quartile	2.98	****	0.92				0.93		1.30	***
Process-3rd Quartile	4.13	****	3.31	***	0.53	****	1.24		1.57	****
Process-Highest Quartile	3.10	****	0.70				1.54			
	Number of Agencies Significant<.05		28		14		25		9	29
	Number of Agencies-Not Significant		10		16		8		11	7
Quality-2nd Quartile Total Score	1.24		0.26	***	0.90		2.29	***	0.06	****
Quality-3rd Quartile Total Score	1.01		0.70		0.64		0.90		0.10	****
Quality-Highest Quartile Total Score	1.14		0.46	**	0.28	***	0.71		0.13	****
	Number of Agencies Significant<.05		27		6		27		13	33
	Number of Agencies-Not Significant		11		19		9		10	2
Process-2nd Quartile	0.77	***	2.58	*	1.30		2.07		4.47	***
Process-3rd Quartile	2.35	****	2.41		0.95		2.93	**	2.00	
Process-Highest Quartile	1.71	****	0.36	**	1.48		3.27		13.24	****
Quality-2nd Quartile Total Score	2.10	****	0.09	****	1.07		2.12	***	0.39	
Quality-3rd Quartile Total Score	2.25	****	0.36	***	0.77		1.11		0.29	***
Quality-Highest Quartile Total Score	1.44	****	0.24	***			0.57		0.18	***
	Number of Agencies Significant<.05		26		16		29		10	20
	Number of Agencies-Not Significant		12		8		1		8	10
Quality—by Subscale Quartiles:										
Quality- 2 nd Quartile Basic Welfare	0.71	****	1.07		19.28	****	0.046	**	1.44	****
Quality- 3 rd Quartile Basic Welfare	0.65	****	0.60		4.38	****	0.768		1.95	****
Quality- Highest Quartile Basic Welfare	0.97		0.57		4.52	****	0.003	***	0.61	****
Quality- 2 nd Quartile Normal Growth & Development	0.90		1.41	*	0.29	****	0.007	***	1.38	****
Quality- 3 rd Quartile Normal Growth & Development	0.75	****	0.49	**	0.62	***	0.043	**	0.21	****
Quality- Highest Quartile Normal Growth & Develop	0.93		0.41	****	0.32	****	0.525		0.59	****
Quality- 2 nd Quartile Administrative Process	1.35	****	0.22	****	0.28	****	0.807		0.20	****
Quality- 3 rd Quartile Administrative Process	1.22	***	1.45		0.31	****	- -		0.63	****
Quality- Highest Quartile Administrative Process	0.87	****	0.67		1.22	**	0.001	***	1.65	****
Quality—by Alternative Scale Quartiles:										
Quality- 2 nd Quartile Assessments	1.43	****	0.50				0.82			
Quality- 3 rd Quartile Assessments	1.72	****	0.47				1.66			
Quality- Highest Quartile Assessments	1.18	****	1.00				0.72			
Quality- 2 nd Quartile Service Plans	0.86	**	0.73				5.92	****	0.06	****
Quality- 3 rd Quartile Service Plans	0.57	****	0.41	****	1.54	****	2.10		83.49	****
Quality- Highest Quartile Service Plans	0.86	***	0.39	***	1144.46	****	4.94	***		
Quality- 2 nd Quartile Contacts	1.01		4.29	**			0.32	***		
Quality- 3 rd Quartile Contacts	1.31	****	4.43	****	451.94	****	0.21	**		
Quality- Highest Quartile Contacts	1.09		11.86	***	354.48	****	0.34	***	0.37	***
Quality- 2 nd Quartile Reunification Services	0.61	****	0.64				2.11	**		
Quality- 3 rd Quartile Reunification Services	0.82	****	0.79				1.03			
Quality- Highest Quartile Reunification Services	0.85	***	0.75		3.95	****	1.44	**	47.38	****

Introducing Compliance/Timeliness measures at the agency level has generally mixed results. While there are some statistically significant impacts on child outcomes in each of the five models, the direction of these impacts does not match expectations in some cases. Significant results which fall in the expected direction of relationship included children served by family-based programs in agencies in the lowest quartile of Compliance/Timeliness performance were significantly less likely to experience reunification than children in the other quartiles ($p < .001$), while children in the second and third quartiles were significantly more likely to experience adoption than those in the first quartile ($p < .01$ and $p < .001$, respectively). Family-Based Reentry, Congregate Care Reunification, and Congregate Care Reentry models had limited patterns of significance, and/or unexpected directions in the signs of relationships emerging from adding Compliance/Timeliness scores to the basic models.

Agency service Quality measures also appears to have little significant relationship on child foster care outcomes in these models, and many relationships again fall in unexpected directions. Most notable here is the strongly unexpected finding that children in agencies in the second, third and fourth quartiles (reflecting higher Quality scores) were much less likely to be adopted than those in the lowest Quality quartile ($p < .001$ in all cases). Also contrary to expectations, children in second and fourth quartile of congregate care agencies had lower reunification rates than those in the lowest quartile ($p < .01$ and $p < .05$, respectively). As noted above, this last result does not necessarily have to be interpreted as a negative outcome, since such reduced reunification may be associated with more stable placements and fewer absences from care than may otherwise be typical in congregate settings. Family-based Reunification and the Reentry models revealed few significant patterns of relationship.

Introducing Compliance/Timeliness and Quality measures simultaneously into the model shows strong improvements in the likelihood of children reunifying from family-based

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care as both Compliance/Timeliness and Quality scores rise ($p < .01$ for Compliance/Timeliness 2nd Quartile, $p < .001$ for all others). However, the other four models exhibit few statistically significant relationships, and many hazard ratio scores falling in the opposite of intended directions.

Table Four also presents data on the number of service agencies with significant impacts on foster care outcomes across the different models. While the number of congregate care agencies with significant impacts on reunification and re-entry is little changed from the base model, including Compliance/Timeliness and Quality measures increases the number of family-based service agencies with significant positive and negative impacts on reunification (from 9 to 26), reentry (from 2 to 29) and adoption (from 5 to 20). This is again contrary to expectations—well measured Compliance/Timeliness and Quality constructs would be expected to absorb much of the explanatory power of agency effects, and reduce the number of agencies with significant outcome coefficients. The instability in these agency dummy variables would be consistent with a model having a specification error, such as having an important variable that has systematic effects on outcomes for children in this system being unmeasured.

Results from analyses in which two different sets of sub-scales within the Quality measure are assessed for their impact on child foster care outcomes. The first of these uses the three subscales used to develop the overall Quality measure—Basic Welfare, Normal Growth and Development; and Administrative Process. These subscales are described above and in Figure 1. While many of the results of this analysis did reach statistically significant levels, few fell in the expected direction. The only patterns in which results were both statistically significant and fell in the expected direction were: higher Quality/Normal Growth and Development scores were related to improved Reentry Outcomes in both Family-Based

and Congregate Care models; and higher Quality/Administrative Process and was associated with improved Adoption Outcomes for the highest quartile of care.

Finally, Table Four presents results from Outcome models which include four alternative scales developed by ACS [Edell, 2001]. These scales are derived from the Quality of Care case review tool, and tabulate agency performance in four specific domains—Assessments, Service Planning, Casework Contacts, and Reunification Services. One notable result is the finding that agencies in the second, third and highest quartiles on Assessment had better Reunification Rates from Family Care ($p<.001$). Even more striking was the relationship impact of Casework Contacts on the Congregate Care models—higher Contact scores were significantly associated with improved Reunification rates ($p<.05$, $p<.001$, $p<.01$ across quartiles 2, 3 and 4) and reduced Reentries ($p<.01$, $p<.05$ and $p<.01$ across quartiles 2, 3, and 4). Again, most other results of analyzing the alternative Quality scales revealed few other patterns of statistically significant results falling in expected directions. Particularly notable examples of such unexpected relationships include reunification services being associated with reduced likelihood of reunification from family-based care, and service planning being associated in most cases with reduced reunification and increased re-entry in both family-based and congregate care models.

Impacts of model specification on agency effects: To understand the impact different specifications of these models have on effect sizes and significance for service agencies, results for four randomly selected agencies were assembled. Table Five presents hazard ratios and significance levels for four agencies, across three model forms: “base” model with no community need scores; “base” model with community need scores; and “base” model with community need scores, Quality of Care and Timeliness Measures.

This analysis demonstrates the substantial shifts in the direction, magnitude and significance of hazard ratios for specific providers under alternative model specifications. For example, hazard ratio values and patterns of significance for Agency 1 increase as more data are included in the models. However, the other three agencies see much less consistent effects. Specifically, each agency has hazard ratios that shift in opposite directions as one moves from the Base model to the most completely specified version—for example, Agency 2 has its hazard ratio shift from 1.21 to 1.18 to 0.41 across these models, indicating that the effect of that agency on child outcomes shift from promoting reunification to signaling somewhat lower (and non-significant) reunification effects.

Table 5. Impact of Alternative model specifications on four agencies, Family-Based Care Reunification Models

	“Base” Model, no Community Needs		“Base” Model, with Community Needs		“Base” Model, with Community Need, Quality of Care & Timeliness	
Agency	Hazard	Significance	Hazard	Significance	Hazard	Significance
1	1.10		1.15	**	1.79	****
2	1.21	**	1.18		0.41	
3	1.03		0.89		0.29	**
4	0.74	***	0.64	****	1.87	***

Conclusions

This study seeks to examine relationships between administrative Compliance/Timeliness and Quality of Care data and foster care outcomes, seeking to elucidate which measures might be most useful to monitor and focus on in efforts to improve outcomes for children in out-of-home placement. The rationale for undertaking this analysis is reflected in Courtney’s [1993] evaluation framework, which emphasizes the role “Program

Process Characteristics” such as timeliness and quality of care should play in foster care outcomes evaluation. Overall, gaps in data available at this time limit interpretability of the findings from this analysis, it does offer slight support for the impact of Compliance/Timeliness measures on foster care outcomes. Further, while overall Quality of Care scores evidenced little relation to outcomes, some subscales and individual indicators within this component may eventually demonstrate substantial utility when additional appropriate data are available.

However, all results presented here face important limitations in their interpretation. The lack of appropriate risk adjustments clearly introduce risk of specification error which could bias hazard ratio estimates reported from these models. These errors arise where factors such as family and child needs, risks and strengths which should be expected to impact on child and family outcomes are left unmeasured. At the same time, the lack of risk adjustment also increases risk of selection bias, as children with different patterns of service need, risks and strengths may be non-randomly distributed across service settings. Without appropriate measures of risk adjustment, selection bias may result in inaccurate measures of association between control variables and outcomes. While including community need scores in these models should somewhat ameliorate these limitations, policy researchers working in real-world settings such as child and family service systems should be cautious in interpreting results presented here.

A second set of limitations on this work lies in the different sampling frames used in collecting the data for the Quality and Outcomes datasets. As noted above, the Quality of Care data were an “in-care” sample, collected from random samples of children within each program type provided by each service agency, while Outcomes were calculated based on cohorts of children entering or leaving care in a given range of years. While the data used in

these analyses were weighted to adjust for potential bias in merging these datasets, the need for such weighting would have been reduced or eliminated if Quality of Care data were collected from admission and discharge cohorts similar to or matching that of the Outcomes analysis.

The results presented in this paper appear to offer limited but positive support for the use of the overall ACS Compliance/Timeliness measures, but less support for the Quality of Care measures or its subscales. Correlation analysis reveals a positive and significant relationship between overall Compliance/Timeliness scores and overall Outcomes scores (Pearson's $r=0.59$, $p=0.00$, two tailed), and average reunification, re-entry and adoption finalization rates rise consistently from lowest to highest quartile of performance. Agency level proportional hazards analysis reveals generally significant relationships between Compliance/Timeliness scores and most of the Outcome variables for family-based reunification and adoption programs. However, results for the Congregate Re-entry and Reunification analysis are inconclusive or consistently fall in the non-expected direction.

Much less support is found for the impact of Quality of Care on foster care outcomes. While overall Quality scores are significantly correlated with overall Compliance/Timeliness scores (Pearson's $r=0.31$, $p=0.02$, two tailed), no significant correlations were found between Quality scores and overall Outcomes. There are also few consistent patterns in mean outcome performances across quartiles of Quality scores. Most Agency level proportional hazards results are non-significant, and the only strongly significant result (Adoption Finalizations at the Agency Level) has hazard ratio results below 1—indicating that higher Quality scores are associated with lower adoption finalization results.

Introducing both Quality and Compliance/Timeliness quartile scores in the Agency level models does notably improve overall results for two of the outcome models. Rising Compliance/Timeliness and Quality Scores are significantly associated with increases in family-based reunification rates, and with decreases in family-based re-entry rates when entered simultaneously. However, the other models remain inconsistent or non-significant when both measures are introduced. Finally, there is limited evidence that some of the subscales within the Quality measure may be associated with positive outcomes in some cases. Substantially significant relationships include: Normal Growth and Development and Reunification outcomes; Administrative Process on Adoption; Assessments on Family-Care Reunifications, and Contacts on Congregate Care Reunification and Reentry Rates.

Future Steps: Overall, the methodology described in this paper appears to suggest some opportunities to strengthen program evaluation of child welfare foster care services, though the specific approaches presented here each should be subject to continuing refinement. The most important area of focus in this area would appear to be development of risk adjustments for children and families served by the foster care systems under evaluation. Incorporating data on child and family service needs from clinical and/or casework assessment tools into the Outcome models might offer substantial improvement in their predictive power [Hodges, 1997; Kirk, and Ashcraft, 1998]. Another approach to identifying service needs could emerge from a structured case review process, such as the Matching Needs and Services methodology developed by the Dartington Social Research Group in England [Dartington, 2000; Melamid and Brodbar, 2001]. If feasible, any methodology used for risk adjustment should have high "test-retest" validity or other mechanisms to permit reliable collection of data over multiple time periods. Beyond allowing for risk adjustment in the existing Outcome models, such data would provide broader measures of the Outcomes

themselves, including the extent to which child and family risks and needs and/or well-being have been shifted during the service period.

A second future direction for this work would be to replicate these models using data on Quality of Care delivered to individual children. While the sampling methodologies currently in place do not permit development of such models at this time, individual level analysis should be possible if future cycles of Quality data collection could be better aligned with the admission and discharge cohorts used in the Outcomes models. Such data would permit much more refined analysis of the impacts not only of Quality subscales, but even individual case review items on child foster care Outcomes. This would also support further refinement of the Quality of Care tool, and could increase the consistency, reliability, validity and efficiency of this measure. At this time, however, the results presented here offer little empirical evidence to support the Basic Welfare, Normal Growth and Process subscales underlying the Quality measure. If clear empirical evidence does not emerge from further review of these tools, this would suggest collapsing these scales into a single qualitative program indicator.

Finally, on-going development efforts are also required with regard to the Quantitative Outcomes data. This should particularly focus on expanding these indicators to include other measures, such as transfers or other exits pathways that children take from the foster care system. Perhaps even more important, these measures should be expanded to include more complete populations of children, especially those experiencing multiple admissions. Finally, efforts should continue to develop review tools designed to focus on children emancipating out of foster care to independent living, who are currently not covered these outcome models.

Chapter 8. What's a Policy Researcher to do? Conclusions, Cross-Cutting Issues and Future Research

The range of issues presented in this dissertation is quite broad, and can only represent a small share of the issues of concern to those interested in integrated, community-based services for at risk children and their families. While the conclusions that can be drawn from this work can only be limited to the range of issues presented here, some patterns which occur across these studies may provide support or understanding of broader issues which impact on services to vulnerable children, families, and communities. In addition, the work presented here may offer some insights of benefit to policy researchers active in these types of research settings.

This section of this dissertation explores these issues, identifying cross cutting themes and issues of methodology, policy, and service practice that may have broader implications for the structure and operation of these services. Finally, this section offers suggestions for future research in this area which may be of benefit in clarifying issues and improving operations of integrated, comprehensive community-based child and family services, and considers how policy researchers might contribute to this work.

Response to Overarching Research Questions: This work presents results from four separate analyses, using a wide variety of data sources to expand the range of program evaluation methods available for child and family services. While interpretation of results from each of these analyses is constrained by a variety of data and methodological limitations, each analysis does appear to offer some potential benefit to service systems. Viewed from the perspective of the Courtney evaluation framework, some of the major findings across these projects include:

- Client Status Measures (Need/Risk Case Mix Adjustments):** Incorporating community-level need/risk scales into event history models of appears to have some utility in improving these models sensitivity to differential risks among clients served by these agencies. Consensus based review and development strategies may provide improved ability to develop such measures. Peer based case review tools such as the Matching Needs and Services process may support development of enhanced measures of child and family service needs; if these such needs data could be collected and reported systematically for children in care with a given system, these might offer substantial benefit as Client Status Measures in future Outcomes evaluations. However, until more comprehensive assessment data on child- and family-level needs, risks and strengths are available within these models, these findings must be interpreted with caution.
- Program Process Characteristics (Compliance/Timeliness and Quality of Care Measures):** Limitations of missing data and non-overlapping sampling frames strongly limit the degree of confidence that can be expressed regarding results from including Program Process data from the ACS Compliance/Timeliness and Quality of Care systems into the foster care Outcomes evaluation models. Specifically, some evidence emerges from this work pointing towards associations between program level Compliance/Timeliness scores and foster care Outcomes. Little association is evinced between agency-level Quality of Care scores and child Outcomes. However, this analysis reveals some suggestion that specific aspects of Quality of Care may impact certain Outcomes—for example, results presented here point towards some positive associations between timely, comprehensive Assessments and Reunifications from Family Foster Care, and that increasing

performance on Casework Contacts in Congregate Care settings are associated with increased Reunifications and declining Re-Entries.

- **Case Status Outcomes Measures and Program Structural Characteristics:** The analyses presented here build upon existing event history Outcomes evaluation models previously developed by ACS and the Chapin Hall Center for Children [Wulczyn, Orlebeke and Melamid, 2000]. As such, these analyses have less to offer directly relating to these two components of these extant models. However, it is worthy of note that these base models did remain relatively robust in the face of the additional data introduced into them in these analyses. Future efforts in this area should include expanding the range of Outcome measures somewhat, particularly to evaluate patterns of children transferring across multiple placements while in care, as well as unapproved child absences from care (AWOLs).

One finding relative to Program Structure is also notable: when Outcomes models in Family-based foster care are extended to include Community Needs, the number of service agencies with Reunification and Re-Entry rates above or below average at even marginally statistically significant levels declines somewhat. If confirmed by later studies having less missing Community Need data and/or enhanced child and family Risk Adjustment data, this finding would support the observation that child, family and/or community needs might be more important in determining child foster care outcomes than the characteristics of the provider agency.

- **Client Satisfaction:** While none of the analyses presented here explicitly explores data on Client Satisfaction, the Child- and Parent-Validation Cycles in the Matching Needs and Services process does appear to be a somewhat innovative approach to expanding the role(s) clients may play in designing and evaluating these systems.

What is a Policy Researcher to do? Implications for research in community-based child and family service settings.

The range of research projects presented in this dissertation reflects only a small share of the challenges confronting child and family service systems undertaking the transformation to integrated, community-based service models. In addition, each of the research protocols described here remain, to different degrees, works-in-progress. Greater attention continues to be required both to the methodological and policy/practice implications of this work. However, the work presented here suggests several priorities for future research in this area, in supporting the creation of effective, comprehensive, community-based networks of care.

This dissertation may offer some insights into the work policy research and policy researchers can play in these settings. One clear observation across the range of analyses presented here is that each of the research and analysis initiatives described in this dissertation was successfully implemented, and were widely recognized as vital supports to the overall agency reform process. This work offers clear support for the roles policy research can assume in social and health service systems undertaking community-based reforms, and should offer encouragement to policy researchers interested in undertaking rigorous work in this field.

However, also suggests some of the limits or bounds on policy research in these settings. The broadest of these boundaries may be the beliefs and attitudes of other actors impacted by these systems: the range of projects described herein was determined largely by the decisions of senior management involved in developing the reform plan for this jurisdiction, informed by the input of a wide variety of advocates, community members and political leaders with substantial interests in this effort. In a sense, then, policy researchers in this setting undertook the work they were asked to do, and understood that this work

constituted part of a larger reform initiative many aspects of which they would have only indirect impact upon.

The research literature in this field may offer some context to understand the range of issue areas which policy researchers explored in this setting, and those which received less attention than might be expected. For policy researchers currently engaged with, or contemplating beginning work in such settings, this work may offer some suggestions for directions to pursue. The most important observation is that such work is doable, and should be done in any system serving children and families with complex needs.

The need for these evaluation systems appears likely to grow in the future, driven both by greater calls for accountability for the performance of these systems, and by the advent of more distributed, community-based service models. Under such decentralized systems, the need for comprehensive, comprehensible data on performance will grow. In fact, the ability to safely track systems performance under community-based strategies may be one major constraint working against those who seek to shift these systems into such networks.

So what is a policy researcher to do? Many of the methods presented in this work would appear to have strongly generalizable utility in a wide range of service settings. These include development of community risk scales to assess the patterns of resource allocation across service systems, and the development of event history outcomes models to assess performance across multiple programs and providers operating in these settings. Other strategies employed in this work may have broader utility but must be considered carefully prior to adoption in other settings. One set of powerful strategies that must be implemented with care may be the Matching Needs and Services analysis, which reveals some lack of consistency in the results presented here, and has had mixed success in leading to actual changes in services.

Still other strategies employed here appear to offer limited utility, and their limitations should probably be strongly examined before they are adopted. The most notable of these is are the Quality of Care measures, which revealed few clear relationships to Outcomes in this analysis, and whose complexity of implementation and cost of operations are quite substantial. However, one point of advice could be offered to any service agency that is at an earlier stage in developing evaluation models—individual level risk adjustments are required in any comprehensive evaluation tool, and should probably take priority over development of quality of care measures to these represent extent competing resource demands.

The most notable domain suggested by the earlier research which was not explicitly addressed by the policy research presented here falls within the implementation and operation of service programs: this research offers little direct information to support improvements in clinical assessment, casework practice, staff development or organizational design. Instead the research conducted in this setting appeared to focus on the “front end” of the reform process, including analysis to support improved allocation of available resources and service design/planning, and the “back end” via effective program evaluations.

Several avenues could be considered, if policy researchers were interested in being asked to participate more directly in issues of program implementation and operation. One approach may be to explicitly build on the areas where this and other research has demonstrated an ability to contribute to the field. For example, changes in service process such as case practices, programs, improvements in staff skill or qualifications, or organizational designs all may be measurable, and their impact could be examined through process/outcomes evaluation methods similar to those described in this work. In addition, the consensus-based analytic techniques underlying the resource allocation and need group analyses described in this dissertation could serve as starting points for additional

research into clinical or service need assessment technologies, perhaps by systematically reviewing a sample of cases which fall within different need groups to more rigorously determine what child and family characteristics or experiences can more reliably be used to define need group membership. Such reviews could also offer insight into what service response is appropriate to each group of clients, which could support design of a differential response service system.

Cross-cutting Methodological Issues

Sampling Frames/Data Limitations: One set of key issues arising from the work presented here are the limitations in available data and data collection methods used in this setting. The limitations were particularly notable with regard to final paper on Foster Care Evaluations, which sought to integrate Quality of Care and Administrative Compliance/Timeliness data into the Outcomes evaluation models. The main source of these limitations lies in the Quality of Care data, which used an in-care sampling frame rather than relying on admission and/or discharge cohorts that are more reliably representative of the child populations under care in the systems under study.

Adopting a sampling frame more closely matching the admission and discharge cohort sampling methods used in the Outcomes analyses would substantially increase the number of cases with both Quality Of Care and Outcomes data. This would have numerous benefits on these models, including reducing the impact of weighting schemes on models specifications, permitting analysis of individual level Quality of Care on child outcomes, and increasing the number of observations included in each model. In addition, models could be expanded to include other measurable outcomes such as transfers to new placements, children absent without leave (AWOL), and children who exit through other pathways such as emancipation to independent living.

Integrating Qualitative and Quantitative Data: Despite these limitations, a consistent theme across the four studies presented here is the strong potential available from integrating data from multiple sources, and in using multiple research methodologies in order to provide a more complete portrait of the service needs and outcomes of multi-challenged children and families. For example, while the paper on Enhancing Equity in Community Based Services uses standard quantitative methodologies to develop a multidimensional scale representing community need across 59 New York City neighborhoods, scale weights were developed using qualitative consensus-based decision-making processes. Similarly, while the work on Matching Needs and Services used team-based qualitative case record reviews to identify patterns of client service need, the success of this methodology was based on carefully considered and properly executed case sampling designs to ensure appropriate randomization and representative sampling of cases within targeted communities.

However, the clearest example of the benefit of integrating qualitative and quantitative methods presented in this body of work is probably the final paper on Evaluating Foster Care Outcomes. This work sought to incorporate results from qualitative Quality of Care and Administrative Compliance/Timeliness measures into an existing quantitative event history Outcomes models in an attempt to strengthen the predictive quality of these models. Unfortunately, the results of this analysis demonstrated little consistent benefit—while some confirmation was found regarding the impact of Administrative Compliance/Timeliness on child foster care Outcomes, the Quality of Care measures revealed no clear relationships. This reflects the continued challenge of integrating qualitative and quantitative methods in the real-world context of services to children and families, and some of the potential limitations of this apparently powerful combination of approaches.

Incorporating Risk Adjustment: Perhaps the single most important methodological contribution of this work emerges from the integration of community needs scores into the evaluation models as reported in the paper on Effects of Community Level Needs on Foster Care Outcomes. In this work community need scores calculated using the methodology described in the first analytic chapter of this work are integrated in the existing Outcomes models, using event history analysis. This work addresses a commonly recognized limitation of service evaluation models: the lack of adequate risk adjustment to appropriately reflect the needs, challenges, and unique circumstances of individual children and families served by these programs [Courtney, 1993]. In this case community need scores are introduced as proxy measures of these child and family risks, since more appropriate measures of child and family need or well-being are not reliably or consistently reported in data available in the subject jurisdiction [Altshuler and Gleeson, 1999].

Including community needs scores in the Outcome models, while requiring propensity weights to accommodate missing data and being only marginally statistically significant in one of four models, otherwise exhibits effects on the models as would be expected--controlling for child demographic and placement experience characteristics, increasing community need values are associated with reduced likelihood of reunification from both family and congregate care settings. However, effects on re-entry models do not follow the expected direction and are not statistically significant. Introduction of community needs scores into these models does not appear to create meaningful changes in patterns of significance and directions of effect of other control variables included in these models.

The most striking implication of including community needs in these models is their effect on the patterns of significance of the dummy variables for agency effects on child outcomes in foster care: the number of agencies with hazard ratios that are statistically

significant drops substantially for family based agencies in both the reunification and re-entry models. Effects on congregate care agency patterns of significance are minimal. While these findings are strongly limited by their marginal statistical significance, and by the need to use propensity weights to adjust for patterns of missing community residency data among children in the sample this dramatic effect on agency patterns of significance is difficult to fully discount. At a minimum, these findings do appear to underscore the potentially strong effects that well measured risk adjustments might have on foster care outcome models if they can be appropriately measured.

Client Validation/Customer Satisfaction: A final methodological point worthy of note emerges from the Matching Needs and Services process, which included explicit attention to client validation as part of the analytic process. Though many reviewers call for the inclusion of client satisfaction measures in any comprehensive program evaluation for systems need analysis, the difficulty of accurately measuring and reporting client perspectives on services has been widely recognized [Wells, 1999; Courtney, 1993]. While the client validation process used in the Matching Needs and Services study does not seek to assess the level or nature of client satisfaction, it does provide a highly efficient and apparently effective method of providing client input, perspective and feedback into a well structured systems level service need assessment and planning process, and may be adaptable in other analytic contexts.

Policy Level and Service Practice Issues

Transparent, Rigorous Methodologies: Also emerging across the studies reported here are a number of specific policy level and service practice issues, as well as indirect support for some very broad policy and practice initiatives which have gained substantial support in recent years. The first set of such observations relates to the connection between

methodology and policy level issues. The studies reported here all reflect work undertaken as part of a major reform initiative in a single large child welfare service jurisdiction. As such, these projects required substantial attention to the political context and operational realities of a complex, dynamic organization, and had to respond to the demands of diverse constituencies including children and families served by this agency, agency managers and staff, non-profit service providers, community members, political leaders, and researchers and evaluators.

These products exhibited several characteristics that appear to contribute to their success in this complex environment. Each of these analyses sought to use rigorous methodologies appropriate to the analytic task at hand, which were widely communicated to the various audiences affected. Results were disseminated using a variety of formats including published reports, public presentations, interviews with journalists, and publication in peer reviewed journals. Necessary resources were obtained through foundation grants and budgetary allocations, providing appropriate access to technical assistance to ensure the reliability and consistency of data analysis. Specific attention was placed on obtaining support and validation for these methods from senior managers, and in the case of the Matching Needs and Services analysis children, parents, and line staff were explicitly included as active participants in the analytic process.

Implementation of Results/Resource Allocations: Each of the analyses described in this dissertation was supported by the use of rigorous methodologies appropriate to the unique demands of the programs and jurisdiction undertaking this work. Furthermore in paying careful attention to clearly and consistently communicating with all affected or interested policy actors, the policy researchers undertaking this work were able to garner sufficient support for and minimize resistance to successful implementation of both these specific

analytic strategies and the larger reform agenda. Examples of rigorous methodology supporting effective implementation include the use of administrative data, case record reviews, and event history analysis to provide triangulation in evaluating foster care services, and the use of multiple indicators assembled into well conceived scales to support resource allocations across communities within this jurisdiction. In each case, research and evaluation initiatives expected to have substantial impacts on providers, communities and clients were widely supported by affected parties.

Another example of the challenge of balancing analytic methods with program demands was seen in the implementation of results from the Matching Needs and Services analysis. In this case, while the analysis indicated a wide range of needs among clients, the jurisdiction chose to focus on housing needs which had been revealed as a need in every review cycle and which was likely to be too complex and costly for most community-level organizations to address without support from central management of the jurisdiction. Again, broad support for the underlying analytic processes allowed the jurisdiction to address challenging policy and programmatic issues which had previously received less focus.

This example and the agency's success in implementing revised resource allocations resulting from the Equity analysis also underscores a less generalizable, but non-surprising observation: increasing the size of resources available to support services can help overcome resistance to implementation of new program initiatives. However, efforts to shift resources to programs and/or communities with greater needs are probably more valuable and more effective during periods of resource limitation.

Association between Community Needs and Reunification from Family Foster Care: As noted above, the evaluation models included in this dissertation are strongly limited by their failure to include appropriate risk adjustments to reflect many of the specific

challenges and strengths of children and families served in these settings. In the case of the analysis of impacts on community needs on foster care outcomes, significant levels of missing data on child communities compound these model specification errors. While an appropriate weighting scheme has been implemented in this study to adjust model results for these missing values, all results from these models must be considered with caution at this time.

Nonetheless, the finding of significant associations between levels of community need and reunification from family foster care is worthy of some note, as it does provide empirical confirmation of a central tenet of researchers, systems managers, political and community leaders and advocates who have made calls for shifting service to the community level and/or targeting resources to communities based on the level and nature of their needs. However, until evaluation models incorporate additional data regarding individual level risks, needs and strengths of families and children served by these systems, these results cannot be confirmed and the precise mechanisms through which this relationship may be operating will remain unclear.

Effects of Service Agency on Foster Care Outcomes: Though the above noted limitations on available data constrain our ability to fully understand its relationship to foster care outcomes, the inclusion of community need in these models does appear to have significant benefit—these measures serve conceptually as proxy measures for a range of service needs confronting families and children served in these settings, while having only minimal impact on other variables already included in these models. As a result, errors in hazard ratios for other variables included in these models should be reduced, allowing the models to more appropriately reflect the contribution each control variable has on foster care outcomes.

These enhanced models reveal notable shifts in patterns of significance among dummy variables for foster care service agencies, with reductions in the number of agencies exhibiting significant effects on foster care outcomes from the base models that do not include community need. If validated, this result might be expected to have some impact on how these models have been used in this jurisdiction. In particular, ACS has used the results of the evaluation methodologies described in this dissertation in recent years to determine maximum capacity levels for service agencies, and the agency director has committed to terminating contracts with agencies consistently seen as poor performers [Bernstein, 2001]. In addition, these models underlay the recently initiated Safe and Timely Adoption and Reunification (STAR) program within this agency, which provides additional funding for agencies whose reunification, re-entry and adoption outcomes exceed levels predicted by these models.

In combination, these uses of the evaluation models described here can and do have dramatic impacts on the agencies providing service to approximately 30,000 children in care in New York City. This jurisdiction or others contemplating implementing similar programs should attend carefully to the potential limitations of these tools as they stand, and take steps to improve their accuracy wherever possible. The analysis presented here appears to suggest two opportunities for such enhancement: improve collection of home address data for children in care to reduce patterns of missing community need data in these models, and make every effort possible to gather and include additional data on child and family service needs, risks and strengths in these models.

Factors Associated with Improved Service Outcomes: Despite the many limitations of the evaluation models underlying the two papers on foster care outcomes, this work does offer some suggestions as to factors associated with improved service outcomes for children in foster care.

Perhaps the most striking of these factors is the relationship between community-level needs and child outcomes in foster care. While multivariate models revealed only marginally significant relationships between community need and reunification from family care, and non-significant relationships in the other models, the direction of relationships in the multivariate and univariate analyses did indicate that increasing community need was associated with reduced likelihood of reunification. Perhaps more importantly, including community needs in these models had the effect of substantially reducing the number of service provider in agencies with significant impacts on child reunification outcomes. This last observation would appear to support the perspective that child foster care outcomes might be strongly affected by child, family and community needs, and less so by characteristics of provider agencies.

Integrating service agency Quality of Care and Administrative Compliance/Timeliness data into the Outcomes models revealed few patterns of relationship between these measures and child reunification, re-entry, and adoption finalization rates in foster care. More specifically, univariate and multivariate analyses provided limited support for the relationship between Administrative Compliance/Timeliness measures and reunification, re-entry, and adoption finalization outcomes. Given the Administrative Compliance/Timeliness measures focus on timeliness and completeness of case work activities, this observation would appear to provide some validation for reliance on relatively easy to manage and inexpensive reporting systems as useful proxies for measures of service quality.

Unfortunately, the more comprehensive Quality of Care measures revealed no patterns of relationship in univariate analyses of child outcomes, and introducing these measures into the multivariate Outcomes models not only revealed no significant relationships between increasing service quality and child outcomes, but showed many relationships which fell in

the opposite of expected directions. Integrating both Quality and Compliance/Timeliness measures simultaneously into the multivariate models also revealed no significant or consistent relationship between service quality and outcomes, though process measures did appear to have somewhat stronger relationships.

Finally, one benefit of the Quality of Care measure is the availability of sub-scale scores which might permit greater decomposition of the factors underlying positive or negative outcomes, if they can be found to be systematically related to these outcomes. Analysis of the three sub-scales used to develop the Quality of Care measures (basic welfare, normal growth and development, and service process), revealed only limited significant relationships in the expected directions—Quality/Normal Growth scores appeared to be related to improved reunification outcomes, and Quality/Administrative Process was related to improved adoption finalizations.

However, these sub-scales have proven difficult for service agencies to understand and use in improving services to children and families [Edell, 2001]. This has led analysts working within this service system to develop alternative sub-scales using elements from the Quality of Care case record review instruments. Entering these alternative sub-scale scores into the multivariate Outcomes models also reveals relatively few patterns of significance, though there are some relationships of substantial interest. These include apparently significant relationships between psychosocial assessments and reunifications from family care, and casework contacts increasing reunification and decreasing re-entry rates in congregate care. Unfortunately, the lack of a sufficient number of cases matching at the individual child level prevents more specific the composition of the relationships between sub-scales items and child outcomes in foster care.

Risk Adjustment: As noted in the above discussion of cross-cutting methodological issues, a key challenge in developing systems level need assessments and program evaluation methodologies is the development of appropriate risk adjustments to ensure that models control for different risks facing individual children and families. These risks arise from patterns of need, child and family strengths and resources, and/or the health and well-being of children and families served by these systems. In incorporating community needs into the existing Outcomes models, the analyses presented here appear offers some support for the benefit of risk adjustment in evaluations of foster care outcomes. However, such community need scores can only serve as a proxy for broader measures of clinical need, child and family well being or risk, and additional work is clearly required to improve risk adjustment in these models.

Unfortunately, there is little consensus among researchers and evaluators as to appropriate methodologies that can consistently and reliably be used in child and family service settings to assess clinical, health, social, educational, family functioning, and other needs and strengths of those served by these programs. While there have been a number of notable attempts to create clinical assessment or risk profiling tools that can better identify patterns of risk for children and families touched by child welfare service systems, their use remains inconsistent and have seen little reported use as part of large scale program evaluation or service planning tools in child and family service settings. However, well designed, thorough, valid and consistent clinical assessment technologies would likely represent the “gold standard” of any risk adjustment methodology. Any such methods having strong “test-retest” validity could also allow for reliable and consistent assessments of changes in well-being and/or needs of children and families served by these systems.

The Matching Needs and Services analysis presented in this dissertation may provide some insight into how more reliable, consistent, and usable assessment tools might be developed and structured. By identifying patterns of need across a representative sample of children and families and using language that reflects the beliefs and understandings of staff and clients served by these systems, this method appears to offer a potentially powerful tool for understanding the challenges facing children and families at risk. While need groups identified through the Matching Needs and Services process may not adequately capture complex health or psychological service needs of at-risk children and families, they might offer useable and efficient means of having caseworkers identify patterns of need for children and families they serve, and for developing improved risk adjustment protocols for program evaluations.

Patterns of Need among Children and Families: The analyses presented in this dissertation also offer a range of approaches to measuring and describing child-, family- and community-level needs of clients who come into contact with these service systems. As noted above, integrating community need scores into foster care Outcomes models revealed a marginally significant inverse relationship between community needs and reunification rates in family foster care, though other relationships were not significant. While this relationship must be considered a preliminary finding given the substantial levels of missing data and the lack of additional child- and family-level risk adjustments in these models, it does appear supportive of the role community-level need may play in foster care outcomes.

Much more persuasive measures of patterns of need emerge from the Matching Needs and Services analysis. This analysis highlighted a number of specific patterns of presenting problems among children and families served in this setting. These included needs in such areas as substance abuse, adoption services, parent skills training/supports,

emotional/psychological well-being, and housing services. More importantly, this analysis offers the accessible definitions of the multiple challenges and strengths of children and families who fall within each of these need groups, clear statements of desired outcomes for each need group, and suggestions for service strategies and practices which may be effective in serving the sets of families. In addition, the Matching Needs and Services process itself appears to have benefit as a tool to support group decision making, especially in the context of implementing community-based service structures to address the multi-dimensional and complex needs of at-risk children and their families.

Integrating Services at the Community Level: Perhaps the broadest implication of the work presented here may be its indirect support for integrated, community-based service models which might offer differential response to children, families and communities with different patterns of service need. Such “differential response” structures would emphasize the adoption of enhanced client and family need assessment technologies and the development of comprehensive, integrated networks of care to ensure thorough, timely, effective and accessible services to vulnerable children and their families. Ultimately such a service strategy seeks to recognize that children live in families and that families live in communities, and that addressing complex, dynamic social problems requires multifaceted service strategies.

The strategies described in this dissertation offer only a portion of the full range of approaches required to support the creation of integrated, community-based social services that can provide differential response to families and children facing different patterns of risk and need. However, each of the analyses presented here does appear to provide useful strategies to support implementation of integrated, community-based service networks, and offers at least indirect support for such strategies. For example, the work on Resource

Allocations in community-based service models demonstrates that even challenging resource allocation decisions can be undertaken successfully, and suggests that such improved equity can be a valuable strategy to improve the overall effectiveness of community based service systems.

Similarly, the papers on Evaluation of Service Outcomes in community-based service models, while focused on traditional foster care service programs, offers a range of strategies which can be used in a variety of service settings to determine effectiveness of programs in meeting the complex needs of at risk children and their families. These include: (a) the use of administrative data to support event history analysis in multivariate models to assess child and family service Outcomes while controlling for demographic and service history experiences; (b) incorporating measures of community need as proxies to account for the different risks and needs of children and families; and (c) some limited support for the use of Administrative Compliance/Timeliness data either incorporated directly in these models or used as additional separate measures of service quality. Unfortunately, this analysis demonstrated little conclusive evidence that the Quality of Care measures used in this setting were effective in delineating meaningful differences in program quality, as measured by reunification, re-entry and adoption outcomes. However, there was some limited support for the effectiveness of certain sub-scales within the Quality of Care measures used here; additional analysis of these sub-scales at the individual child level might find support for these relationships, if a sufficiently large, representative sample could be matched across these two data collection systems.

The strongest support and clarification of the role integrated, community-based services might play in supporting multi-challenged families and communities presented in this dissertation clearly emerges from the work on Matching Needs and Services. This analysis

demonstrates that while vulnerable children and their families have a great many interlocking needs, clear patterns can be identified and staff and clients can reach consensus as to how they can best be addressed. This result could underpin the development of systems of care that can respond to the individual patterns of need of groups of families, and perhaps serve as the first step towards a true "differential response" system which would provide more timely, more appropriate and more effective services to these hard-to-serve populations.

Also notable in these results is the priority they place in most cases on intensive, multiple services and supports for the child's entire family--services which must be accessible and comprehensible to these families. While the Matching Needs and Services analysis does not explicitly provide a supporting rationale for the delivery of such services in communities where at-risk children and family reside, this perspective appears to infuse the language and recommendations emerging from this work. This latter observation is reflected in the subject the agency's decision to use this methodology in its efforts to create integrated, community-based networks of care in this jurisdiction.

Suggestions for Future Research

One area requiring substantial additional research clearly lies in evaluation of complex social service programs, including foster care and preventive social services. While the value of event history analysis as a tool for quantifying outcomes in multivariate models has been increasingly well documented, the analyses presented here and the work of other researchers in this field makes it clear there remains significant need to broaden the range of outcome measures included in these models, and to enhance risk adjustment methods which can better differentiate the level of risk and types of need facing children and families under care. While risk adjustments must be clinically valid and reliable if they are to be effective, they must also be sufficiently robust, efficient, usable and comprehensible to ensure staff working in the

systems can effectively use them. This remains a substantial challenge, which will require resources and attention if it is to be addressed.

Closely related to the issue of risk adjustment is the development of assessment technologies which might support improved measurement and diagnosis of presenting issues and strengths of families under care. While many systems have implemented a variety of child safety assessment protocols designed to support investigation of child abuse/neglect complaints, somewhat less attention has been paid to the development of consistent, valid and reliable clinical or diagnostic assessment tools which can be used by casework staff providing on going services to children and families. There remains substantial need in the field for the continued enhancement of available tools and the development of new tools, particularly those with significant levels of "test-retest" validity which could be used to assess changes in child and family service needs during the course of care. Such tools, in addition to providing improved risk adjustment for evaluation purposes, could provide broader measures of client outcomes including changes in level and nature of need during the course of service. Once aggregated, these measures of service need change could dramatically deepen understanding of what constitutes effective service, and which strategies are best able to address the needs of different client populations.

Improving the ability to appropriately assess patterns of need across children and families served by these systems will also support development of "differential response" systems that would better target services to clients with different needs. The work presented here from the Matching Needs and Services analysis provides one portrait of what these need patterns appear to look like, revealing that families served by these systems have diverse challenges and strengths which may require different service priorities. In particular, this work appears to suggest some specific areas where further exploration, development and

adoption of alternative service strategies would be well worthy of further consideration.

These include services to families facing challenges in areas such as substance abuse, emotional health, parenting skills, domestic violence and housing.

Ultimately, the value of integrated, community-based networks of care may not be assessable until a wide range of supports and analytic tools are put in place and comprehensively examined in a number of jurisdictions. Specific components which will be required in this broad evaluation include: appropriate and timely evaluation structures; reliable and consistent risk adjustment systems, particularly those based on comprehensive, clinically valid child and family assessment technologies; service practices which emphasize differential response based upon these assessments; and the implementation of comprehensive, integrated networks of care which can provide the full range of services to families and children in the communities where they live. Until such work is completed it remains vital that policy actors operating in these settings continue to demand methodologically rigorous and responsive research in this arena.

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